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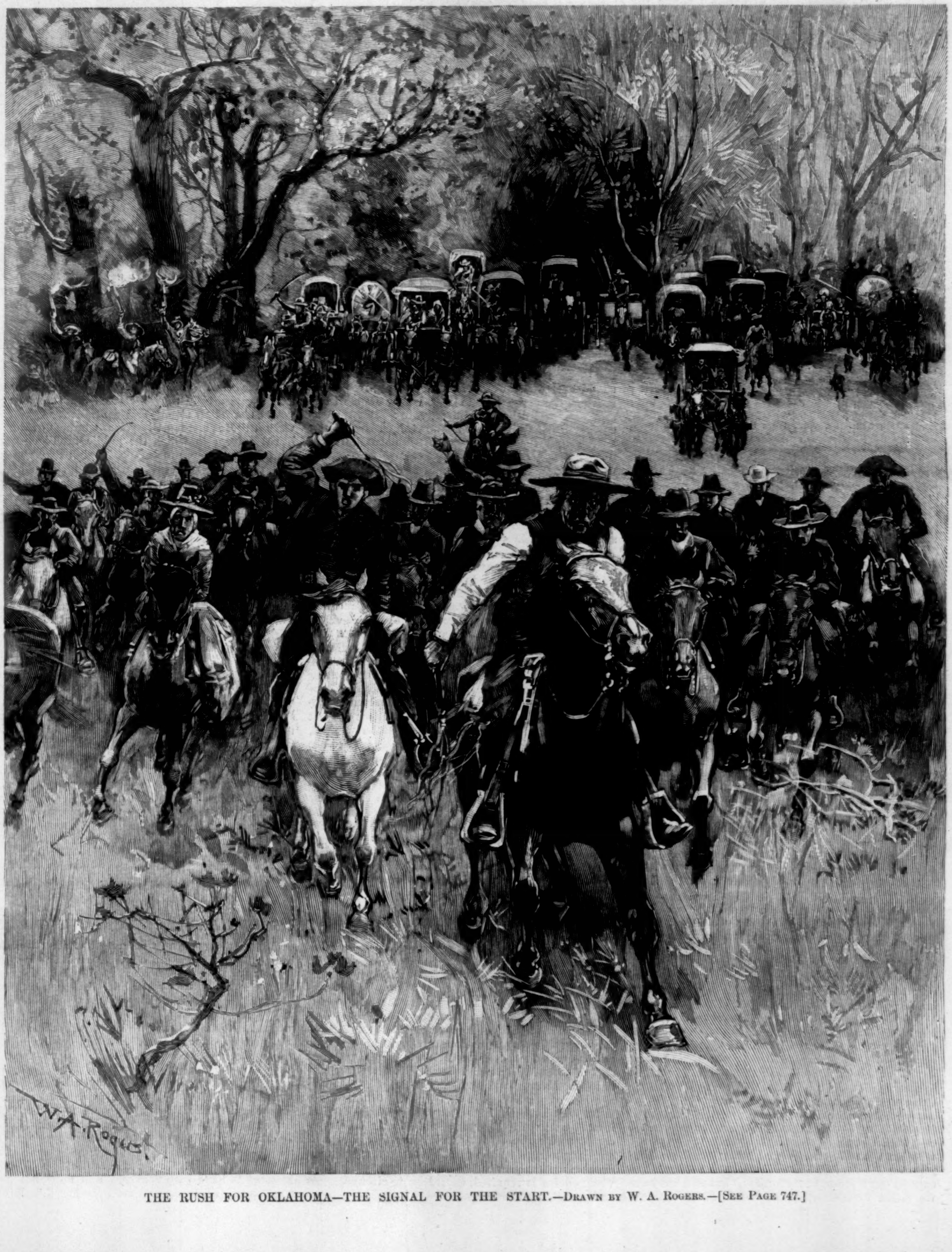

THE RUSH FOR OKLAHOMA—THE SIGNAL FOR THE START.—Drawn by W. A. Rogers.—[See Page 747.]

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THE ISSUE IN NEW YORK.

UNLESS all questions of State government are to be wholly subordinated to national policy, the pending issue in New York is well summarized by Mr. FASSETT as that of good government against Tammany Hall. Tammany Hall is properly described as "the most corrupt and unscrupulous political organization which ever existed in this country." At the late Democratic Convention it overthrew all opposition within the party, and the success of the Saratoga ticket would secure its supremacy in the State. In this situation Mr. FASSETT stands for the intelligent opposition of New York to Tammany Hall, and the protest of the County Democracy speaks for the Democratic part of that opposition:

> "The Democratic party of to-day in this State, like the Democratic party of those dark years prior to 1871, is absolutely dominated and controlled by a combination between Tammany Hall and a canal ring. What consequences befell the party before, as the result of such a combination, we are none of us old enough to forget, and we warn all the honest, sober-minded Democrats of the State to remember those consequences, and when the proper time arrives to unite with us in the effort to wrest the control of the party machinery from those who in the end can bring to it only disgrace and defeat."

A prominent Democrat, the late fusion candidate for District Attorney, also says:

> "The election of FLOWER would be the death of the County Democracy. It would make Tammany triumphant throughout the State, and would give that organization a voice in the national affairs of 1892. The interest of self-preservation demands that the Counties should work for the defeat of ROSWELL P. FLOWER, who was placed in nomination without a voice from this Democratic association."

That is undoubtedly the opinion of a very large body of strictly Democratic voters. The County Democracy may think that party "consistency" and party "loyalty" require a public expression of adhesion to the "regular" nominations. But the voters who compose the County Democracy will hardly vote to destroy their organization by wholly subordinating the party to Tammany Hall. It would be stultification for any Democrat who thinks that the control of the party machinery should be wrested from those who can bring only disgrace and defeat upon the party, to vote for that disgrace and defeat and for a return of "the dark years."

The opposition to the Tammany ticket, therefore, will be very much stronger than the united Republican vote, for it will include a very large and influential Democratic vote and a great multitude of independent voters who will gladly unite in the opposition to Tammany Hall. We speak of the united Republican vote, because opposition to the leadership of Mr. PLATT will not prevent the closest union of Republicans against the supremacy of Tammany. It is long since the Republican party was less distracted by factional feuds. Mr. WHITE, who represents its general intelligence and character rather than any personal faction, and the representative friends of Mr. WARNER MILLER are all co-operating sincerely with the especial friends of Mr. PLATT, while Mr. FASSETT has opened the campaign amid an enthusiasm which usually marks the close of a Presidential canvass. This is partly due to the fact that the Republicans feel that in him they have found the leader who has been long wanting to the party; and it is largely due also to the fact that the Republican platform, amid the general baits of all party platforms to catch votes, declares strongly and unequivocally for the great measures of State policy which all good citizens approve, and which Tammany Hall instinctively opposes. It cannot be seriously supposed that the hope of completing ballot reform, and of honest government in general, lies in the supremacy of Tammany Hall, sustained by the vast and corrupting liquor interest of the State.

It is not surprising that the campaign should have opened with enthusiasm, and that "Plattism" as an issue should have disappeared, although it threatened to become an issue until the action of the Democratic Convention and its consequences were fully apprehended. Such an issue as the practical control of the State by Tammany Hall takes precedence of every other at this election. It appeals to everybody who has the public welfare at heart, and it is a simple and intelligible issue. We have not failed to express our opinion of "Plattism," but still less have we failed to declare, in the words of an eminent Democrat and a distinguished and public-spirited citizen, that Tammany Hall is a conspiracy against honest government. The incisive and unsparing revelations of the Tammany power and methods made two or three years ago in the *Evening Post* are not forgotten. That power is unchanged, and its managers are the same. That the scheme of holding the World's Fair in New York was a shrewd plot for the benefit of Tammany is now a very general belief, and it is no discredit to Mr. PLATT that he saw it when others did not see it, and stoutly resisted it. The fight against Tammany must be carried on under the necessary conditions of a party contest. Those who would make it effective must vote with the Republican party for Mr. FASSETT, and the candidate and the party must prosecute the campaign as a party and a party candidate. They will, however, if they are wise, restrict the discussion as much as possible to the State issues. But they cannot risk the effect upon their own voters of throwing over all allusion to the general party policy. It is fortunate that the combined foes of Tammany have in Mr. FASSETT a candidate whom in this contest they can cordially support. In personal character and address, intellectual and political ability, educated intelligence, and familiarity with State affairs, he is what the Governor of New York ought to be.

FREE SILVER COINAGE.

THE New York Democratic declaration that "we are against the coinage of a silver dollar which is not of the intrinsic value of any other dollar of the United States" is very satisfactory and very politic. For no sensible Democrat could suppose that had Democratic New York followed the Democrats of many other States in declaring for free coinage of silver, the Democratic ticket could escape defeat upon that declaration alone. The great apprehension that was manifested before the Convention by those who are not unfriendly to the Democratic party showed, however, the feeling in regard to its possible if not probable action. There was, however, no doubt whatever, certainly none was expressed, that the Republicans would pronounce, as they did, for a sound currency. There is no doubt the free silver movement in the Senate was led by Republicans and was carried by Republican votes. But there is equally no doubt that the acknowledged Republican leaders and the majority of Republican Senators voted against the bill, while only two Democratic Senators voted against it; and in the House, while a small Republican minority voted for it, only a small Democratic minority voted against it.

It is impossible to deny, of course, that while neither of the parties is united in sentiment upon the subject, and while even Republican leaders like Mr. MCKINLEY have a confused and uncertain record of action upon it, and have not maintained a consistent and simple opposition to disturbing the currency, yet the great force of Republican sentiment is against free coinage, while the leading Democratic candidates for the Speakership are either open free silver men, or wisely reticent, or say with Mr. MILLS that it is not an immediate issue, although the Democratic ex-Speaker, Mr. CARLISLE, anticipates the passage of a free silver bill by the House. The Speaker appoints the committees, who are the prompters of legislation, and the chances that a free silver Speaker would appoint anti-free-silver committees are not many or large. Granting, as it must be granted, that both Republicans and Democrats, as parties, are not a unit upon the question, there is a very great difference in their attitude. Probably it is not doubted that next year the Republican platform will declare distinctly the President's doctrine that every dollar issued by the government should be as good as every other dollar. But it is very unlikely that the Democratic platform will contain the New York declaration upon the subject.

It cannot be said, therefore, that the question of currency or of the free coinage of silver has been excluded by the action of New York from the contest of next year. Democratic New York, controlled in its action as it now is by Tammany Hall, will hardly be allowed to rule the National Convention at its pleasure. Moreover, the free silver coinage representation in it will be too strong to be disregarded. The important fact is that this issue in some quarters takes precedence of that of tariff reform, and it cannot be bowed out by those who are more interested in the latter. The Massachusetts Democratic Convention will probably express a distinct and satisfactory opposition to the universal business disturbance which free silver coinage threatens. But we shall still doubt whether a Speaker will be elected who holds the Massachusetts view, or whether a free coinage bill would be lost in the House. When parties differ within themselves upon public policies of vital importance, voting by party names and labels becomes still more difficult. Eloquent orators will continue to repeat the venerable truth that we must choose between parties, but sensible men will choose, when choice is required, according to circumstances and probabilities and experience.

MUNICIPAL GOVERNMENT.

ANOTHER question in the State campaign of peculiar interest and importance is that of the separation of municipal government from politics. Upon this subject the Republican Convention made this declaration:

> "We approve the principle that the government of cities is primarily a matter of business administration, and the enactment of laws to secure for all the cities of the State genuine home-rule, the enactment of a law to require a general and uniform system of municipal accounting, and the adoption of an amendment to the Constitution requiring the passage of a general bill for the government of cities."

The Democratic Convention contented itself with declaring that the Republican party "indicates its hostility to home-rule by its efforts at meddlesome legislative interference with the affairs of large cities." As large cities receive their charters from State Legislatures, and as charters are legislative acts, there must naturally be some legislative relation between the State and the cities, and there could be no wiser legislation than that which would secure to cities and their tax-payers the enormous saving of money and gain of efficient administration which would result from making their government primarily a matter of business. Political city government is virtually a matter of spoils, and there is probably not a great city in the world so poorly governed as New York, nor one in which the intelligence and character of the city are so little represented in the government.

The movement for making city government a business administration is favored by the same public sentiment which demands ballot reform and reform in the civil service. It is the same intelligence which holds that the public welfare means something else than party spoils, and that those citizens may properly take an active part in public affairs who are concerned with something else than the distribution of patronage. This feeling has led to several impromptu efforts to elect a Mayor upon a platform of the interests of the city, and not of a national party. But they have been the sudden rallies of minute-men, and did not prevail against the trained bodies of regulars. But their constant recurrence, and the hearty and active support that they receive from the younger voters, show how strong and permanent is the conviction that it is a most important branch of the political reform to which the public intelligence inclines. There is no more hopeful sign than the fact that the better political interest and action of the country does not yield to the tyranny of the party machines, but turns from the overthrow of slavery and the maintenance of the Union to the purification of administration.

This sentiment probably does not yet control either party, but it exists in both, and the plain and emphatic Republican declaration of this year shows how strong it is in that party, and will naturally attract to its support in this campaign those who hold the measure proposed by the Republicans to be an essential part of the general movement of political reform. A constitutional amendment authorizing a general law for the government of cities, a general and uniform system of municipal accounting, and a business administration, which means thorough civil service reform in the city offices, compose a scheme of municipal reform which should command the sympathy and support of those who have given both to former local movements to rescue the city from the ignorance and corruption in administration to which it has been so long helplessly subject. Platforms are often *omnium gatherums* of professions to catch votes. But the professions prove the existence of the public sentiment to which they appeal, and the probable sincerity and future action of the professors must be determined by experience and observation, and he would be a person of extraordinary faith who should anticipate honest and effective legislation for business municipal administration from the leadership of Tammany Hall.

BLACK-MAILING GOVERNMENT CLERKS.

GENERAL GARFIELD'S memory has always suffered from the publication of his letter in 1880 asking, "How are the departments doing?" And the HUBBELL circular of two years later led to an exposure of the facts in the infamous system of black-mailing the government employés for campaign expenses, which has been of the utmost service in diminishing the ravages of the abuse. No honorable and self-respecting member of Congress would now care to authorize the use of his name to pick the pockets of government clerks and messengers and char-women. This system of extortion is familiar, of course, to Tammany, which lives upon such ill-gotten gain. The late Street Commissioner in New York wrote in April, 1890: "All the Republicans have been removed from the Department of Street-cleaning, all of the County Democrats and all of the VOORHIS Democrats have been removed, and none but good Tammany Hall Democrats are to be found." Everybody knows how such street-cleaners are made to pay for their places.

Notwithstanding the odium which has been justly cast upon this practice of extorting money from government employés under the implied threat of removal, which makes the money the price of the place, and notwithstanding that the law recognizes the infamy of the business by punishing its transaction in a public building and by one public officer with another, the Republican Executive Committee of Ohio has issued a circular to the Ohio clerks in Washington demanding "a liberal contribution," and five per cent. of the salary is, we understand, suggested. The plain plea is that the places are spoils, and the implied argument is that the holders may be justly despoiled.

It is such conduct as this, and the general, not universal, silence upon it in the Republican press, that covers with ridicule the Republican claim to be distinctively a civil service reform party. There is no more flagrant and repulsive form of the spoils system than the outrage of political assessments. It is the thief's challenge, "Your money or your place." Mr. McKinley, then Republican leader of the House, said last year in his place that the best sentiment of the country, Republican and Democratic alike, sustained the civil service law. That law forbids all government officers to solicit anywhere, and forbids everybody from soliciting in public buildings. The law brands the practice as a misdemeanor, and there are men now under indictment for the offence. Will Mr. McKinley suffer the offence to be attempted by outsiders in his behalf without rebuking the offenders?

BALLOT REFORM IN NEW YORK.

As we have already said, there is no more important question involved in the New York election than that of ballot reform. It is a measure for which the intelligent public mind everywhere has shown itself to be ready, and nothing proves more plainly the essentially sound political condition of the country than the rapidity with which the value of this reform has been perceived and the promptness with which it has been adopted. New York was not the first State to move, and the effort in this State has been obstructed throughout by Governor Hill. The bill was three times vetoed by the Governor, and was finally signed by him only after it had been much weakened. But Mr. Fassett, in one of his speeches, says that that fault shall be remedied if he and his friends get the chance. The two Conventions have pronounced upon the subject, and last week we quoted both declarations. It is the misfortune of the Democratic party in New York that it is not instinctively a party of reform and progress, and the friends of large and positive measures of reform would hardly count first upon the support of Democratic sentiment in the State.

The weakening of the bill was mainly due to Governor Hill's "paster." One chief object of the bill is to secure entire secrecy to the voter, so that his selection of a ticket may be completely protected from observation. This prevents bribery by making it impossible to know just how the voter votes. Under the old system the ticket which the voter was paid for voting was kept in view of the boss until it was dropped in the box, and the boss knew by observation that the goods he had paid for were delivered. To prevent this was the vital object of the reform bill, and this the Governor would not tolerate, because it completely baffled the boss. The Governor therefore declared that the provision disfranchised the illiterate voter, and he made the paster the condition of his approval. The paster is a complete ticket which the boss furnishes to the voter; and although he cannot actually see that the ignorant voter uses it, yet it is so much easier for him to use it than to make a selection from tickets that he cannot read that the Governor, in the interest of bosses and bribery, was satisfied to sign the bill.

The friends of an honest ballot reform now propose to substitute for the paster and the other tickets one large ticket, on which all the names of candidates are to be printed, and their party character will be indicated by some device, as the flag or the eagle, so that the most illiterate man, upon looking at the paper, will see the names for which he wishes to make his mark. For this amendment of the blanket ballot the Republicans distinctly declare, and make it one of the points of their canvass. Their declaration is short and unmistakable, like the old Republican demand for no slavery in free territory, or free soil, free speech, free men. The Democrats flounder in a long and confused statement demanding reform, but no limitation of manhood suffrage, and claiming the credit of the existing law. But they make no allusion to the amendment to strengthen and perfect the law, and should they carry the Legislature there is no reason whatever to suppose that they would support it. On the other hand, there is no reason to doubt that a Republican Legislature would pass the amendment and complete the great reform.

DEMOCRATIC CLOUDS IN NEW YORK.

Lieutenant-Governor Jones, of New York, who had at one time anticipated the Democratic nomination which has fallen to Mr. Flower, has announced his intention of opposing the election of Mr. Flower in every effective way. This he does believing that the interests both of the people and of the Democratic party have been jeopardized by the "usurpers" who have obtained control of that organization. Mayor Chapin, of Brooklyn, who was urged by Boss McLaughlin's delegation as the candidate, and was nominated by it in the Convention in a speech so savage in its insinuations against Mr. Flower that the orator was loudly hissed, has written a letter of congratulation to the candidate. In Buffalo and Erie County, where the friends of Mr. Cleveland felt themselves to be outraged by the friends of Mr. Sheehan, the candidate for Lieutenant-Governor, the feeling is so strong that many Democrats will probably decline to vote for him.

As part of the political game, perfect harmony in the party is proclaimed. But those who are familiar with the game know that play in it as well as the others. One immense advantage of the secret ballot is that the voter can bolt any candidate or all the candidates, and no other man the wiser. Party discipline, because of bolting, becomes practically impossible under this excellent law, and thus parties will more truly represent real conviction by enabling their members to discipline the leaders by refusing to support improper nominations.

The Democratic situation in the State is further complicated by the allegations concerning Governor Hill. It is said on one side that he has been deposed as Democratic boss-in-chief, but on the other he is reported as expressing his entire satisfaction with the situation. He would, however, hardly announce dissatisfaction even if he felt it. What is plain is that he has lost prestige. There is no doubt that the Convention nominated by acclamation the candidate whom, although he had originally selected him, he threw over just as the Convention met. Probably there will be no further talk of Mr. Hill as a Presidential candidate next year. On the other hand, with the evident renewed ascendency of Tammany Hall in Democratic State politics, it cannot be said that the especial friends of Mr. Cleveland are much encouraged, although it would be interesting to know who it is that reasonable Democrats suppose could be a successful candidate of their party next year if the man who represents the chief issue upon which Democrats can appeal hopefully to the country should be set aside.

DEBATES ON THE STUMP.

The custom of debates upon the stump between opposing political candidates has never become common in this part of the country, nor is it likely to become so. The reason is that a man who is an orator and used to public speaking, or who has ready humor and plenty of assurance, has an immense advantage over one whose views may be sound and who would make a much better public officer, but who cannot speak, or who speaks ineffectively. In the present campaign in New York, for instance, the candidates would be very unequally matched upon the stump.

A quick wit, a talent for ridicule, the sympathetic power of putting an audience in good humor and raising a laugh against an opponent, easily influence a crowd, and give the advantage of a public discussion to the speaker who possesses such gifts. A platform discussion presupposes an equality of oratorical equipment between the candidates which very seldom exists. The weight of the argument is very much less effective upon such an occasion than the skill and charm of the advocate. Indeed, the chief service of the platform in a political campaign is to arouse enthusiasm, to appeal to party spirit, and to secure prestige. The effect of a political speech which is a well-considered plea, fortified with facts and appealing to reason, is made less upon the hearer than the reader. Webster and Seward affected a multitude by their presence and reputation as great men and leaders, but much lesser men "carried the crowd."

It would be, generally, a great mistake for a party to encourage public debates unless it was as sure of the quality of its speakers as of the soundness of the views which they would advocate. The intellectual work of a campaign is done among the millions of readers at home, not among the few hundred hearers at a meeting. Of course the speakers address these millions also in the reports of their speeches. But the immediate effect at a meeting is produced by the cleverest speaker, not by the most intelligent, able, and judicious man. Lincoln's victory in his debate with Douglas, the most noted in our history, was due rather to his immense superiority as a popular orator and to the obvious justice of his cause than to his undoubted mastery in the argument.

A WAR CLOUD IN EUROPE.

It is impossible that this country should not be deeply interested in the prospect of a European war, and it is undeniable that there is reason to think such a war not improbable. The purpose of Russia to reach the Mediterranean is a permanent threat of war. It is not a purpose which Russia is likely to relax, and it is one which can be fulfilled only by force. While such a situation continues, the disarmament of any of the great powers of Europe is not to be anticipated, and the smallest cloud may portend the tempest.

The late incident of the passage of the Dardanelles by Russian vessels carrying armed men and material of war, following the evident extremely good understanding between Russia and France, has been followed in turn by the landing of British troops upon the Turkish island of Mitylene, commanding the entrance of the Dardanelles, with the unsatisfactory explanation that it was for purposes of drill. This, again, was followed by an urgent request for explanation from the Porte to the British government, and at the same time the Porte shows itself not unfriendly to the Russian-French alliance by conferring upon the French foreign minister a decoration of great distinction, and upon his wife the similar decoration of a Turkish order for women, instituted by the Sultan himself. Meanwhile the British ambassador at Constantinople, Sir William White, has received no explanation of the Mitylene incident from the British admiral in Turkish waters, which favors the view that the landing was a demonstration to test Turkish feeling. The admiral, however, has communicated with the home government, which, if pressed, will say that the Porte had long ago granted the privilege of drilling on the islands of the archipelago.

In this situation Russia is the important power in apparent alliance with France and Turkey, and Russian opinion, that is to say, the government, expresses itself decidedly in a newspaper article that "the clearest explanations are required from England, and the naval commander responsible for the landing on the island of Mitylene should be punished. The powers in sympathy with the Sultan will unite to prevent England from committing arbitrary acts which endanger the security of Turkey." The London *Standard*, in an article said to be inspired if not written by Lord Salisbury's private secretary, says, with equal decision: "It is advisable that the whole world should know what the English government will do. Russia will lull itself into a most dangerous delusion to imagine that Great Britain will, under any circumstances, suffer Russia to obtain command of the Dardanelles. As long as Turkey effectually guards the straits, England will not interfere, but immediately the government of the Sultan, in a fit of timidity, perversity, or bewilderment, shows itself incapable of performing that imperative duty, England will assuredly not shrink from having recourse to expedients for meeting the difficulty." This is plain language of the kind that would be used if trouble were considered probable.

THE BOWERY.

A WORD OF EXPLANATION.

Some of the observations in an article on the Bowery printed in the issue of this paper for the week of September 19th have conveyed an unforeseen impression of their meaning. The intent of the article was to present characteristic sides of Bowery life. To this end the main and obtrusive elements of it were set forth.

It is well known that businesses of long standing and of excellent repute are to be found there. Although they are *in* the Bowery, they are not of it. And thus it happened that the article failed to mention the rare and pleasant exceptions to the rule of Bowery life. David Graham Phillips.

PERSONAL.

In a pleasantly appreciative review of Charles Dudley Warner's book, *Their Pilgrimage*, published by Harper & Brothers, the London *Spectator* speaks of it as an excellent guide to all the chief summer resorts in the Eastern States, from Niagara Falls to Fortress Monroe. The story which runs through the book is also praised, the descriptions of scenery and characters truthfully recalling to the writer in the *Spectator* a trip which he took through the same region some years ago.

—The Prince of Wales, it is said, smokes daily three or four cigars of a brand that costs $1800 a thousand. His royal taste can be satisfied only by incense from cigars most carefully made from the best material raised in the choicest tobacco-raising district of Cuba.

—The proposed construction of M. Jansen's observatory on the summit of Mont Blanc has been suspended, temporarily at least, M. Imfeld, the Swiss engineer, having failed, after cutting through twenty-six metres of snow and ice, to find the necessary rock foundation.

—H. B. Silliman, of Cohoes, New York, who has been appointed President of Hamilton College, was graduated from Union College in 1845, and has made considerable money in various business enterprises. He is a trustee of Hamilton, and received the degree of LL.D. from the college.

—The number thirteen has proved a lucky one for J. Sloat Fassett, the Republican candidate for Governor in this State. He and one of his sons were born on November 13th; he was married on February 13th; he became Collector of the Port of New York on August 13th.

—Candidates for political honors are sometimes driven to queer expedients in their pursuit of votes, but Colonel William J. Vannort, the Republican candidate for Governor in Maryland, takes the lead for originality by challenging his opponent, Frank Brown, to a ploughing contest at some agricultural fair in the State before election day. Whether the challenge is accepted or not, the granger voter is expected to be duly impressed.

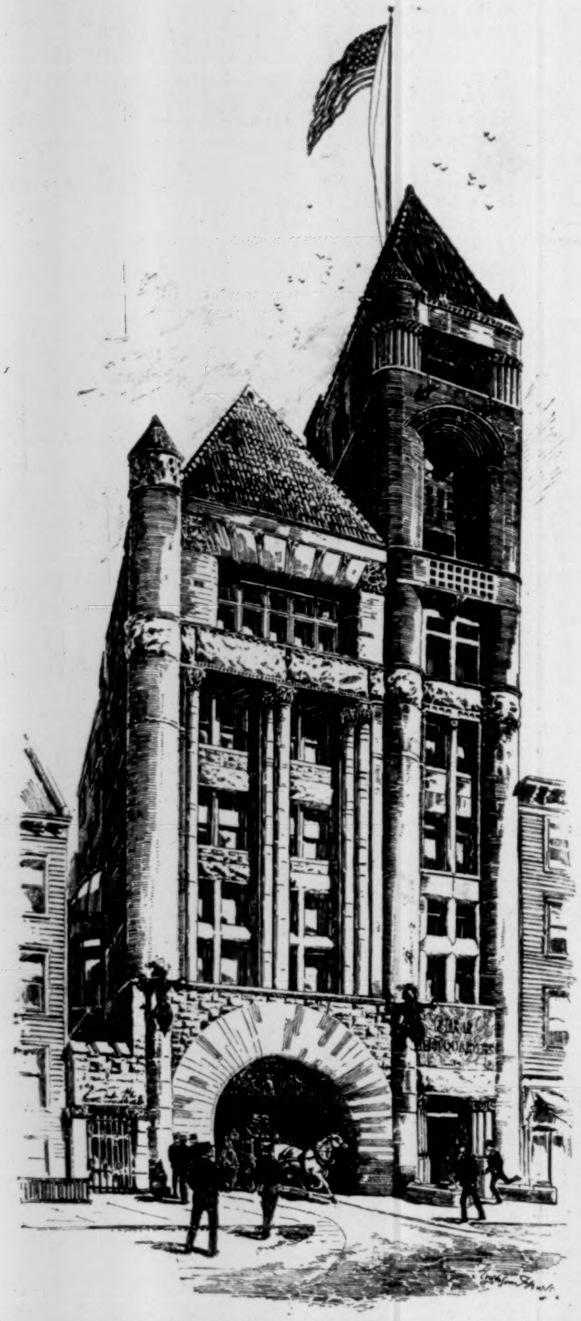
—Poultney Bigelow, Frank Millet (vice-president of the National Academy), and Alfred Parsons, the English draughtsman, whose work has frequently appeared in Harper's Monthly, recently made a canoe trip together down the Danube, from the Black Forest to the Black Sea.

—Notwithstanding the cares of office and the disquietude caused by nihilist plotters, the Czar of Russia has kept his interest in and increased the fine collections of birds' eggs and stamps which he began as a boy.

—Two crowns have recently been designed by Emperor William for himself and the Empress. They are to be of pure gold, one a little smaller than the other, and in their construction will be used many valuable gems from the magnificent collection owned by the house of Hohenzollern.

—Francis Darwin, a son of the great evolutionist, is winning fame for himself in London as a biologist.

—Louis Cortigny, a well-preserved centenarian living not far from Paris, is the last French survivor of the battle of Trafalgar. He was a cabin-boy on board the *Redoutable* when the shot that killed Lord Nelson was fired from that vessel.



THE NEW HEADQUARTERS OF THE BROOKLYN FIRE DEPARTMENT.—After the Accepted Designs.

THE BROOKLYN FIRE DEPARTMENT.

It becomes more and more evident that for the better control of the paid fire department of a large city there must be one general headquarters, sufficiently large to centre there not only a certain portion of the directing power, but also of that electrical machinery without which a fire department to-day would lose most of its efficiency. The old Brooklyn quarters on Jay Street having been found entirely inadequate for the necessities of the case, in the spring of this year a new building was proposed, and in March plans and specifications were sent in to the authorities, and the designs of Mr. Frank Freeman, an architect of that city, were accepted.

On the old site where the former Fire Department stood the new building is now in process of erection, and it is believed that in a twelvemonth the construction will be finished. There will be a frontage on Jay Street of 50 feet, and the main tower will have an elevation of 126 feet from the curb. Within certain restricted limits of width, Mr. Freeman has been able to devise an imposing building. The façade is to be of red Jonesborough granite, red Lake Superior sandstone, brick, and terracotta. The roof will be covered with dark Spanish tiles. There will be a double entrance, one leading to the offices immediately under the taller portion of the building; the other, a large and well-proportioned arch, will be used for vehicles. In the basement will be the heating and elevator machinery, and above that ample room for those horses and wagons without which the heads of a fire department could not perform their duties when quick service is a necessity. There is to be full space for the clerical force required, and for the storage of documents. On the fourth floor there will be a training-school and gymnasium, for the saving department of a city fire organization must have men who understand their perilous duties. Above this floor are the offices of the telegraph, superintendents, inspectors, and linemen. Here, too, will be placed the central electrical machinery, with its many wires stretching to all parts of Brooklyn. The Fire Department of that city will be fortunate in having two complete sets of electrical apparatus, as a duplicate will be kept in another building on Jay Street some distance from the new headquarters. It will be at once understood that in case of an accident and the destruction or breaking down of one set of central apparatus another will be always ready.

The inside decoration of the building will be in good taste, the doors being of solid oak. Such ornamentations as are necessary in railings to stairs are to be in bronze. Tiles of a color adapted to the building will be used for floorings, and in some cases for the walls. The high tower will be surmounted by a steel mast, on which the flag of the department will be flown.

Mr. Freeman, who has designed a number of large buildings in Brooklyn, has shown good taste in this structure. He has kept strictly within such limitations as were imposed on him by a fire department. A certain elevation of one portion of the building was necessary, and the 126-foot-high tower is not a campanile, but a lookout. All buildings should be fire-proof, and there would be something ludicrous in the idea of a fire department being reduced to ashes. The architect has therefore made his structure strong and forcible, as if to assert its indestructibility. He has, then, controlled his art, and made it properly subservient to the requirements of the case.

CHICAGO ELECTRIC FOUNTAIN.

People have been known to travel miles to see the electric fountain in Lincoln Park, Chicago. It is worth travelling miles to see if one be of the sort that can be entertained by the play of infinite combinations of colors in flowing water rising into the air to a height of say 100 feet or more. Every Tuesday and Friday night from 20,000 to 30,000 spectators gather to see the brilliant show.

Whenever the fountain plays, it plays at night. Of course it plays at night. In the daytime, under the pitiless revelation of the bright sun, the fountain looks like a Christmas dinner table after the family has left it, or like the old morning stage of a tank drama. It is nothing but a large pool of more or less muddy water, out of which arises a circular wall of brown granite. Very prosaic indeed. But at night—when you see the fountain at night in the witchery of the darkness—no wonder-work of Hermes the Thrice Great, no illusion of Robert of Flood, no design of Apollonius or marvel of Johannes Philostratus, was more singularly beautiful, more laden with the raiment and color of the magical, more deft in touches of transition, in changes changing from one bewildering aspect to another, infinite in number, fascinating, full of surprise.

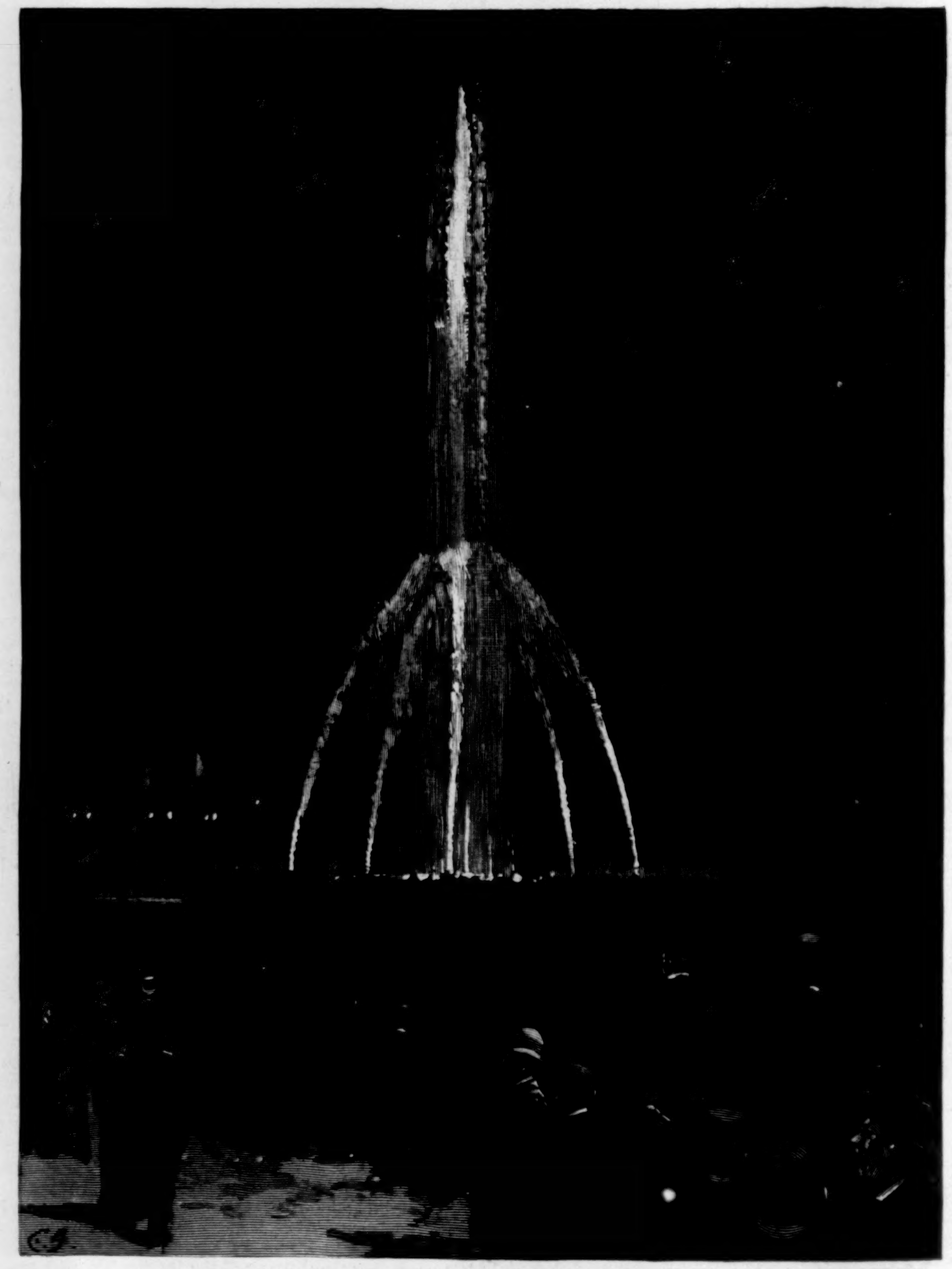
This is what the thousands see in the fountain at night. Higher, higher, as if it were aiming at an aspiration always just beyond its reach, but still possible of attainment, leaps the central stream, big of endeavor for climax, and never wearied of its failures, flashing from its lateral spray a million points and prisms of light, and piercing on and upwards with noble effort until its force is spent; then breaking over the topmost point, and tumbling and tossing down upon itself, flinging the old and passed water in the faces of the subordinate jets that follow it meekly, coming anew eternally with new supply, only to mount and flash and fail and fall again. As it leaps up from its unseen source in the pool, and stretches itself longingly towards the stars, it may be said to resemble some ancient snake deity in some ancient temple in the old Orient, showing its lithe and lovely form covered with beautiful flames and flakes, fit for worship, and symbolizing the purpose of man in the universe—"upward endeavor, ampler existence." A little thing as measured by the standards of material extension, but noble, sublime, inspiring, ineffable, unspeakable sentiment.

Across this central bit of color, of light and shadow, in the main picture, are flung the eight subordinate streams, equidistant from the centre at the base, and between these are several hundred minor jets, each a little rainbow in itself, adding to the incomparable coloring of the greater streams their own bedazzling splendor. By a clever arrangement of reflectors and colored cover glasses, to be described below, every stream—central, subordinate, and minor—is turned into a living, leaping rod of color. The light falls on every drop, every spray, every atom of water that is thrown out of the jets, and the total result is an ever-shifting and surprising rise and fall of a clear liquid column about one hundred feet high and about fifteen feet in diameter.

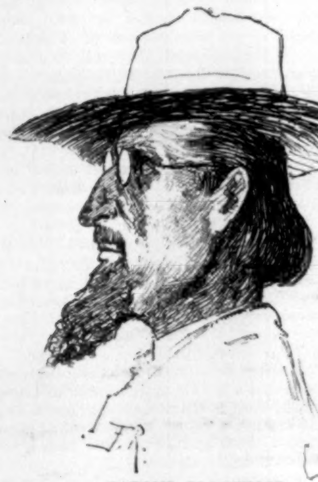
The height to which the central stream is thrown (and this is true of all the streams) is controlled by a system of valves in the great square cellar or room directly under the bed of the large pool surrounding the exterior wall of the fountain. From the roof of this room rise fifteen cylinders of brick wall, inclined (except the central one) at an angle leaning toward the centre. These cylinders resemble the ventilators of a steamship if you remove the arched neck. Their tops are nearly level with the top of the circular wall, and out of their mouths project the nozzles of the water-pipes. They are closed at the mouth with round plates of glass, designed to prevent the return of the water to the cellar. Directly beneath each opening in the roof of the cellar is a carbon electric light backed with a strong reflector. On an upright turning-post near the light is a circular frame, in which are fixed five circular plates of colored glass—blue, green, purple, orange, and white. The post is turned, the light is covered by one of the plates, and all the water that issues from the jets in this cylinder is transformed into a column of brilliant fire—blue, green, purple, orange, or white.

As has been said, there are fifteen cylinders; therefore, to be sure, there are fifteen lights, and five sets of color glasses of five glasses each. The master of a system of quaternions may oblige you by calculating the combinations into which these seventy-five different glasses can be thrown. But the people who watch the beautiful spectres of the fountain are too much impressed with the poetry of it to bother with the mathematics of it. The central stream measures one and a half inches in diameter, and the eight subordinate streams one and a quarter inches.

The fountain was made in England, and is said to have cost Mr. Charles T. Yerkes, who presented it to the commissioners of Lincoln Park, $30,000. The work of the erection of the fountain and the arrangement of the sublights were made under the supervision of Mr. Dwight Wiman, son of Erastus Wiman, of New York.



THE ELECTRIC FOUNTAIN AT LINCOLN PARK, CHICAGO.—Drawn by Charles Graham.



PARSON BLACKFOOT.

THE JONAH OF LUCKY VALLEY.

BY HOWARD SEELY.

I.

THEY called him "Jonah." Even before he burned down his ranch in 1880, in an ambitious attempt to fertilize his broad acres by a system of prairie fires, he had acquired this baleful title. As he lost his wife as well as his home by this last catastrophe, it would seem that his cup of misery was full. Such, indeed, was the current opinion among the stockmen of Lucky Valley. A few who had the honor of Mrs. Durgy's acquaintance were known to express scepticism. But be that as it may, the name of the unfortunate ranchman had by this time become so synonymous with misfortune that although Parson Blackfoot made his trials the theme of a stirring sermon, and exhorted him to renewed hope on the ground that "whom the Lord loveth He chasteneth," it was noticeable that the worthy divine did not thereby increase public confidence in his future fortunes. Neither did this glowing discourse improve his prospects as an eligible widower among the fair sex of Tom Greene County. In spite of such potent recommendations as agreeable manners, a fine figure, and a handsome face, it was generally agreed among the feminine portion of Lucky Valley that to marry William Durgy would be simply to tempt fate. This conviction was the outcome of a long train of personal disasters. It began 'way back in '71, when he told his partners one morning that he had compounded a new "sheep dip" that was prompt and efficient against the ravages of scab.

"No need of hot water, tobacco strippings, nor nothin'," he explained in his enthusiasm. "Ye jest fill your vat, put in the drug, chuck in your sheep, and the jig is over."

It proved so. Within twenty-four hours after the first experiment they lost 2000 fine ewes and wethers, and the firm went into voluntary bankruptcy. The chagrin with which this accident filled his partners is said to have inspired his unfortunate christening. It clung to him ever after.

Then Durgy abandoned sheep-farming, and went into the saloon business. At the outset he seemed successful. He had the best billiard table in the county, his bar was well patronized, and he was an agreeable and popular proprietor. But his evil genius pursued him in his new vocation. One day he mistook some strychnine, which he had used for killing wolves, for the powdered sugar he employed in the preparation of a cocktail for which he was famous. The blunder had a disastrous effect upon his patronage. For the second time the ill-starred individual availed himself of the bankrupt act, and the hostelry, which had acquired fame and popularity as a public-house, became the property of an enterprising undertaker.

And so misfortune pursued him. He borrowed capital and set up a "faro game" at Oskaloo, which at first won largely, but was ruined by a famous plunger who was monotonously fortunate in "coppering the jack." A fast mare he bought at a very low figure broke her leg in her first race, and destroyed the flattering prospects which the turf seemed to offer. Some cattle he owned as a side venture drifted during a cold "Norther" the same winter, and were frozen to death on the Llano Estacado. Shipwrecked in health and fortune—in all but the flow of animal spirits, which seemed to survive his every calamity—he wandered aimlessly about from one point to another, until one summer's day he stranded helplessly in Lucky Valley. He had been attracted thither by the prevailing prosperity which seemed to favor its inhabitants. An easy affability of manner, to which I have before alluded, speedily won favor with the stockmen. In the garrulous confidences of the bar-room they listened to the story of his woes and wanderings. In this way they came to regard him as a man of push and energy who had fallen upon evil days.

One memorable evening, when the convivialities at the "Round-up Saloon" had been unusually hearty and harmonious, some local philanthropist, roused by Durgy's eloquent recital of his troubles, mounted a bench and suggested that contributions were in order to mend his broken fortunes. "What we want to do is to set Bill on his feet agin and give the boy a show," was the spokesman's terse way of putting it. The proposition, though a novel one in a frontier community, met with singular success. A hat was passed around immediately, and whether owing to the mellow condition of the donors or the personal popularity of Bill, it was returned to him half full of greenbacks and silver. Certain individuals whose wealth was better represented by live-stock than currency promised to assist him in starting a ranch by generous contributions from their own herds. The real-estate agent of the county was importuned in Bill's behalf by influential parties, and induced to offer him a fine and well-watered range, to be settled for on a very indulgent system of partial payments. Thus it came to pass that, through the kind co-operation of his neighbors, Durgy found himself once more embarked upon a sea of apparent prosperity. He pursued his new enterprise with the enthusiasm of his sanguine temperament. But that same evil star which hung over his past was apparently too potent for even the favorable atmosphere of Lucky Valley. As soon as Durgy began to put certain theories of his own into operation, they recoiled upon their projector with ruin and disaster. When his ranch burned down in the prairie fire that he himself had started, he was evidently disheartened. The loss of his wife he bewailed in eloquent terms.

"You see I'd got kinder used to Marier," he explained to a friend who was well aware of the late Mrs. Durgy's temper and eccentricities, "and I miss her jest ez much ez I do the house and the rest of the furniture. Marier was a little inclined to heave things, and used to round me up occasionally, but all the same I feel right lonesome now thet I'm travellin', so to speak, on a lone trail."

The sympathy of his auditor was apparently beyond words.

II.

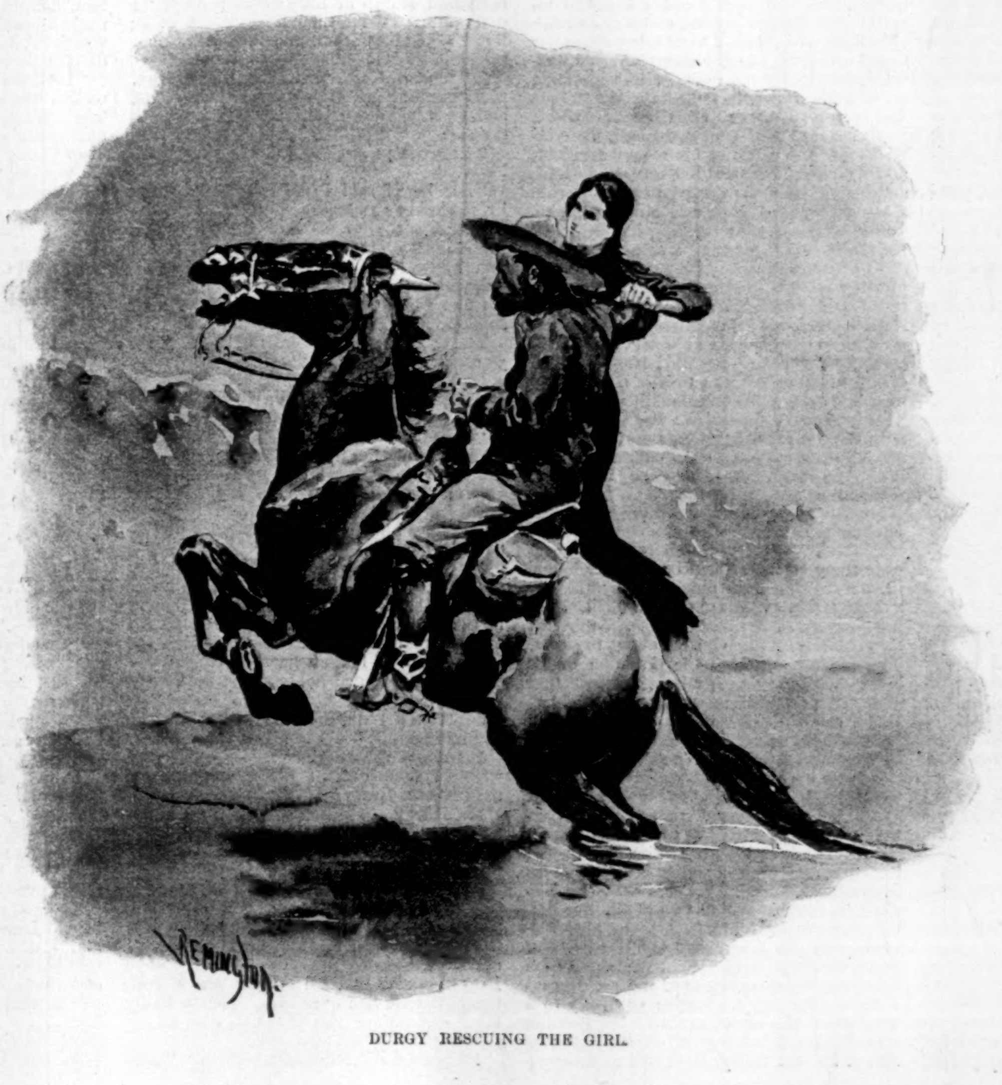
It had been raining intermittently for several weeks in Lucky Valley, and the face of nature showed everywhere the effects of so much moisture. Although it was in the fall, the encircling hills were green with verdure, and the black line which marked the recent prairie fire was fast disappearing before the upspringing grasses that flourished above the burned area.

As the unfortunate ranchman rode over the undulating prairie billows, he noted with a melancholy satisfaction this renewed fertility.

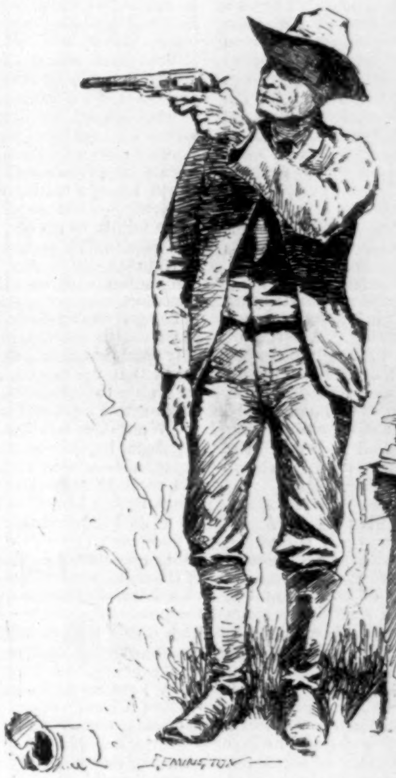
"Jest as I reckoned," he muttered; "and now the ranch is gone when things is lookin' up."

A gray forbidding sky hung above him, and in the air were the cries of various wild fowl winging their way in the direction of the river. Mounted upon Lone Star, a powerful chestnut horse, of which he was justly proud, William Durgy felt a momentary sense of superiority to his misfortunes. With the strong horse beneath him, that feeling of power which every good rider knows seemed to stir within him.

"Game's plenty to-day," he said to himself, with a sweeping glance over the outlying prairie. "P'raps if I rode over to Wild Cat River I might get something. I've only my rifle, I know," ~~glancing down~~ at the Winchester in its leathern case attached to the saddle, "but I might get a crack at a flock of geese. I reckon I'll try it."



DURGY RESCUING THE GIRL.



THE SHERIFF SHOOTING AT BEER BOTTLES.

He touched his horse with the spur and dashed away.

Lone Star was feeling good that morning, and seemed to enjoy the gallop as much as his master. They were already half-way to the river, when the rider's eye was attracted to a piece of writing-paper fluttering in a thorny shrub. Such an object is so rare a sight on the prairie that Durgy at once reined up and disentangled it from the sticks and grass in which it had lodged. It proved to be a note that had been folded and was now lying half open. Durgy glanced over it. It was written in a feminine hand:

"DEAR JIM,—I got the bracelet all right, and on my arm it looks too lovely! I'm coming across again Wednesday, if I can. I'll meet you at the old place. Take care of yourself, and keep out of mischief. Father's suspicious. Excuse this note. My ink's out, so I had to write with shoe-polish.

LOU."

A smile of amusement gathered on Durgy's face as he read this unusual missive. It was evidently some appointment for a clandestine meeting. He had stumbled upon evidence of some secret romance. With pardonable curiosity he ran over in his mind the names of the ladies of his acquaintance in the neighborhood. There was none that corresponded with the one attached to the note. A sudden inspiration came to him.

"I wonder if thet ain't Sheriff Townsend's daughter?" he soliloquized. "I hear he's got an uncommon fine girl, but I never yet got to see her, she's been away visitin' so much. The old man's been so crippled up since thet fellow filled his right arm full of buckshot thet it's likely he can't look after his fam'ly. Now I think of it, his daughter was away from home the time he got shot. I should think thet the man who got this note would be a little more careful of such favors. Mebbe he had it inside his hat and it blew away."

So thinking, Durgy rode on.

"I wouldn't wonder if it might be rather risky at the crossing to-day," he muttered, as he thought of the recent rise in the water holes and creeks. "Strikes me I wouldn't want any child of mine fordin' the Wild Cat such a day as this."

With these meditations passing through his mind, he drew near the line of trees that bordered the watercourse. Arrived at the crossing, he found the current rushing with unusual force over the stones and rocks that marked the ford. Below the shallows the water dimpled and eddied in the sullen depths, and hurried its swollen tide through the recesses of a rocky glen. A brisk wind that was blowing was tossing spray and foam about, and the noise of the gale and the rush of the river increased the general sense of insecurity. A perilous day certainly to attempt a crossing. Durgy was thinking of this as he rode Lone Star knee-keep into the stream and permitted him to drink.

Sitting in the saddle, with the bridle thrown loosely over his horse's neck, he saw a young girl ride suddenly down the sloping bank of the farther shore. She was mounted upon a small sorrel pony, and without hesitation plunged into the stream, guiding the animal with singular courage over the slippery stones. In his surprise Durgy was stricken mute with a feeling of admiration for the daring rider. But as he noted the unusual depth of the water her progress denoted, he raised his voice in a cry of warning. Apparently this was not heard by the girl, between the noise of the gale and her preoccupation in guiding the footsteps of her horse. Immediately after, Lone Star raised his head, and seeing the mustang, now half-way across the stream, uttered a shrill neigh of welcome. The unexpected sound caused both rider and horse to look up, and in the act of stepping from one stone to another in the swift water, the latter missed his footing. A series of stumbles, ending with a plunge into deeper water, followed, and in his efforts to regain his foothold the horse rolled half over with a mighty splash. He emerged immediately after, but with an empty saddle, and turning about in mid-stream, started in a panic for the opposite shore, which he rapidly gained.

Seated in his saddle, William Durgy witnessed this sudden accident with an alarm that sent a chill through his pulses. A second later he saw the young girl rise to the surface and make an effort to sustain herself on the swiftly flowing current. She appeared to have some knowledge of swimming, but hardly had she risen when, striking his spurs deep into his horse, Durgy was himself struggling with the river. A few plunges and he felt the noble animal swimming under him, Lone Star's grand muscles keeping him well up as he sat in the saddle. Aiding his horse as much as possible, he was in a few seconds by the side of the struggling girl, and he cast an arm about her in the midst of the flood. Raising her with all his strength, he enabled her to gain a foothold between his heavy boot and stirrup leather, while she clung with the tenacity of fear to the pommel of his saddle. Then turning his horse about in the stream, he made every exertion to reach the opposite bank. Encumbered as he was by the additional weight of the girl and the lack of balance, it was a severe struggle, but the exceptional strength of his horse stood him in good stead. The brave beast labored with eyes starting from their sockets, and once, as he fought his way into shallow water, he fell upon his knees. But, assisted by a strong rein on the bridle, he struggled to his feet, and panting and blowing, at length drew them out upon the opposite bank, where he staggered from exhaustion. Durgy lost no time in dropping with his clinging burden to the ground.

His first impulse was the masculine one to chide the girl he had rescued for her temerity. But as he glanced at her he saw at once that, notwithstanding her wet and bedraggled condition, she was unmistakably pretty, and with a self-restraint equally masculine, under the circumstances he refrained. When he released her she did not fall, but, after a few gasps for breath, tottered to a tree and leaned against it. Here she dashed the water from her hair and eyes, and discreetly wrung her garments. The ranchman busied himself with his horse, which was badly spent, and had scraped himself a trifle against the rough rocks.

As soon as possible he turned his attention to his fair companion. She was still leaning against the tree, and quietly awaiting the result of his scrutiny.

"Rather a close call," he remarked, pleasantly.

The girl laughed, and said, "I reckon." She glanced at Lone Star, who was shaking himself like a huge water-dog. "How did your horse stand it?"

"All right. He's a little winded, thet's all, and the rocks cut him up some. You must have wanted to get across pretty bad to try the ford such a day as this," Durgy hazarded.

The girl blushed. Then she shivered. "Yes, I did; but that's all right," she said, curtly. "It was mighty lucky you happened around. I can swim a little, but don't believe I could have done much." She laughed again nervously. "I reckon you saved my life. Now my pony's gone, do you reckon you can take me home?"

Durgy glanced at his horse. "I shouldn't wonder. Where do you live?"

"At Sheriff Townsend's."

"Are you his daughter?"

"I am."

"I want to know! Well, I reckon you'd better climb up, and I'll foot it. You can manage, I reckon."

"After a fashion," the girl replied, "if you'll go slow."

He held the stirrup for her and assisted her into the saddle, where she perched with one knee over the pommel.

"Go on," she said, as Durgy took the bridle, preparatory to leading Lone Star. "You can see the house up on the divide there. And—one moment."

Durgy turned and faced her.

"You needn't say I was tryin' to get across the river. Draw it a little mild."

Durgy nodded. Leading the horse slowly, he started for the cottage.

III.

The cottage of Sheriff Townsend was perched on the summit of a long divide that afforded an extensive survey of the surrounding country. Several times, as they paused in the tedious ascent, Mr. Durgy inhaled his breath with a sense of the growing altitude, and cast an admiring glance over the landscape below him. There was Wild Cat River, from which they had but recently emerged, writhing between banks of fertile greenness at his feet, and, far beyond his own ranch, fringed by distant blue hills, over which an eagle was wheeling aloft on motionless pinions. He caught a glimpse, on a distant slope, of several flashing white bodies, which his eye readily detected to be a herd of antelopes. A succession of pistol shots came faintly to his ear.

"The hunters seem to be aware thet game is right plenty to-day," he said to his fair companion, with an air of attempting conversation.

The girl smiled down at him from her lofty perch on his chestnut gelding. "Oh, that's only papa practisin'," she said, quickly. "He keeps that up reg'lar every day since he's been able to get about. He's down in the pecan grove back of the house, I reckon."

"What does he shoot at?"

"Beer bottles—mostly; tomato cans—sometimes—when the bottles give out," the girl replied. "He don't have much to say about it, but I reckon he knows what he's up to, so I don't bother him much. Well, if there ain't Calico, the old rascal!" she suddenly ejaculated, as they came in full view of the cottage, and beheld a small sorrel mustang leisurely cropping the grass in front of the gate. "He ought to be licked within an inch of his life. I reckon I can catch him on horseback. Mebbe you better go down to the grove and keep papa busy talking, while I get myself to rights. I can manage mother if I'm let alone. Remember to 'draw it mild' about the river."

Durgy looked up at the still dripping naiad, glancing down saucily at him. In spite of her wet garments clinging uncomfortably to her figure, in spite of the bedraggled tresses, and a certain chilly pinched look in the face, which the brisk breeze of the summit was momentarily augmenting, the eyes that met his own were very roguish and interesting. With a peculiar tremor that suddenly passed over him, and which he did not attribute to his recent immersion, he instantly made a mental resolve to "draw it very mild"—even if it led him to actual prevarication. And so hesitating, he turned away. But as he walked he felt the subtle fascination of the young woman still thrilling his pulses. He began to realize that there might perhaps be good ground for the magnetic influence which he had formerly heard this daring girl was wont to exert over her various lovers. So thinking, his hand sought his pocket-book in order to glance over again the singular missive he had found that morning. But he was startled by a volley of shots from the grove below him. Thus suddenly recalled to his present surroundings, he hastily ran down the hill and entered the grove.

He had no sooner penetrated its shady confines than he perceived, at a short distance from him, the absorbed figure of the sheriff. He was standing in front of a small table, which had been roughly knocked together out of a few boards, and was painfully loading with his left hand a large frontier Colt's revolver. As the occupation necessitated his turning the cylinder and inserting the cartridges with the same hand, the process was necessarily slow. His right side, which was turned toward Durgy, exposed his crippled arm—the result of his recent accident, and which he had steadily refused to have amputated—still asserting its lost power in the sleeve of his coat, and holding the revolver in position by pressing it against his body. Sheriff Townsend was a large, powerful man, with a singularly determined expression of mouth and jaw. He wore no beard, and it was currently reported that since his accident his charming daughter had been his barber; but the expression which his closely shaven face revealed frankly to an appreciative public was that of a thoroughbred bull-dog in an exceptionally ugly mood. This suggestive appearance was accented by a disposition to wear his hair cropped close, and by certain lines due to pain and suffering, which had not, it may be remarked, tended to refine his features.

Mr. Durgy, as he remarked the general resemblance I have noted, was so impressed by it this morning that he forebore to intrude at once upon the sheriff's privacy. He halted in his tracks, and remained breathlessly watching the latter's every movement. Having loaded his weapon, the sheriff raised it slowly in his left hand, as if about to shoot. The gesture indicated the direction of his marksmanship. With an amusement that almost found vent in a shout of laughter, Durgy saw a number of beer bottles perched on the tops of bowlders and vinegar kegs surrounding the sheriff in a rude semicircle.

He had hardly noticed the various targets when the sharp-shooting began. The sheriff handled his revolver with admirable dexterity, wheeling from left to right with great rapidity, and as his pistol dropped to the horizontal, in each instance a tremendous explosion followed. When the smoke lifted, it was apparent that two of the five bottles still remained intact. Raising his revolver slowly, Mr. Townsend shattered one of these to atoms with a final shot; and then dropping the smoking arm, and picking up a piece of chalk, he limped painfully to a long board that leaned against a neighboring tree trunk. Upon this he recorded the result of his last volley, and for a moment remained in serious contemplation of former scores. The sheriff's record was faithful, but not scholarly. It ran as follows:

Munda —Oktobre 5.—13 broke 5 mist.
Toosda— " 6.—14 " 1 "
Wensda— " 7.—15 " 0 "
Thersda— " 8.—7 tummaty Kans board Nun mist.
Fryda — " 9.—14—Kleen Swepe—bar one.

He was still looking at this illiterate testimonial of his prowess as a pistol shot when he heard a dry twig crack beneath an incautious footstep. Wheeling about suddenly, he met the brown eyes and handsome lineaments of William Durgy.

"Howdy?" said that gentleman. "What's up—practisin'?"

"Be ye blind, thet ye can't see?" the sheriff responded, with a sharpness of utterance that was more like a peevish bark than human speech. He limped nimbly back to his pistol and began reloading the arm, his sullen look accented by the interruption.

"No, my eyes ain't gone back on me none jest yet, I reckon," responded Durgy, cheerfully. "But I didn't quite see the object of wastin' so much powder, thet's all."

"Ye didn't, eh?" barked Sheriff Townsend. "Be ye payin' for it?"

"No."

"Waal, then," replied the other, sharply, "s'posin' ye leave thet to the feller thet *is*." He smiled a grim smile that disclosed a set of strong, almost canine teeth. "Thet's a pretty neat score, ain't it?"

Durgy cast an admiring eye over it. "All done with the left, Joe?"

"Sartin," said the sheriff. "Did ye reckon I held the six-shooter in my teeth? 'Jonah,' why don't ye let yer brains save thet tongue o' yourn a trip?"

"I don't see how ye do it," said Durgy, ignoring the other's peevishness.

"Do it? *I got to do it!*" replied the sheriff, pausing in his loading, and bringing his jaws together with a snap like a steel-trap. "Ever sence you sent me on thet fool's errand, and I got them twelve buckshot in my right arm for my foolishness, ef I don't learn how to sling an ugly left, what in thunder's goin' to become o' my business?"

A pained look stole into Durgy's ingenuous features. "How was I to know, Joe, thet the feller reckoned to lay ye up?" he remonstrated.

"I don't know ez I said ye knowed it," the sheriff responded, testily.

"I met him in the dusk," Durgy continued. "The man was a stranger to me, and was coming from the village. He asked me to tell you thet there was a fight down at the 'Round-up' and some permiskiss shootin', and he wanted to see you about it. Naturally I came in and told ye he was waitin' outside."

"And I went to the door empty-handed, and got both barrels of a shot-gun like a plumb idgit," the sheriff broke in.

"Well, was thet my racket?" inquired the other, deprecatingly.

"Ef you weren't natchally sech a 'Jonah,'" returned the sheriff, bitterly, and raising the mutilated stump of his arm in protest, "I don't know ez I'd thought so much of it; but it's yer bein' thet, and me gittin' shot inter the bargain—thet's what gits me!"

"I reckon I am; thet's so," said Durgy, plunging his hands into his trousers pockets, and gazing down at his boots in apparent despair.

"I reckon ye are," said the sheriff, mercilessly.

"See here," said Durgy, suddenly, stung by the other's manner. "You know what I've always told ye. I've brooded over this thing until I'm plumb crazy about it. If you know the feller that crippled ye, all you've got to do is to tell me who he is, and I'll make him a *fact-similar* of ye. *I will*, so help me!"

The sheriff sneered in infinite scorn. "Do ye see thet score?" he asked.

Durgy nodded.

"What's the total of them figgers?"

"Sixty-three out of a possible seventy."

"Do ye reckon, 'Jonah,'" said Townsend, fiercely, "thet I'm down here every day poppin' away fur the sake of givin' somebody else an opportunity to bury my dead fur me?"

He drew himself up with a grim professional pride.

"You hear me? You kin bet yer life I've spotted him; you kin bet your life I'm layin' for him; but it's because I do my own shootin' thet I'm keepin' dark in this bizness. All I sez is thet this finger"—he extended the index finger of his left hand significantly—"is jest itchin', and liable to get St. Vitus's dance from hankerin' to get the drop on him. When I do, the effect on him 'll be suthin' like this."

He raised the revolver as he spoke, and with a sudden quick aim took the head off the last beer bottle in a twinkling.

Mr. Durgy applauded in genuine admiration.

"Thet's why I'm holdin' this solitary praise meetin' in this grove every mornin'," Sheriff Townsend continued, wiping the weapon carefully before restoring it to its holster—"so I kin jest natchally drop thet gentleman ez winged me, and do it proper. I don't ask no assistance whatever. But when I do it, ef you like, I'll call on you to read the burial service over him. He's a likely chap, and p'r'aps you might be able to say suthin' neat on thet occasion."

He paused and reflected a moment. "And ef he should happen to be a little pearter with two hands than I be with one, and should drop me, instead of I him, why, then mebbe *you* might want to apply fur the contract. Ef you should, I hain't no objection, but I will ask ye in thet case to look after little Lou and the old woman, for then, ye see, there wouldn't be no one left to take my place."

"Ye needn't worry on thet score," returned Durgy, warmly. "Ef it should be your hard luck, Joe, to strike a snag and go under, I'll do what I can for the family."

"I reckon ye would, 'Jonah'; I'll do ye thet much credit," said the sheriff. "But, gorramity! whar hev you bin, anyway?" he asked, now for the first time noticing the soaked garments of the other. "Hev you been inventin' a new 'sheep-dip,' thet yer plumb wet through?"

"Hardly, Joe," returned the other, with a forced smile at this malicious allusion to the mistake that had been the beginning of his misfortunes. "The river was a bit high comin' across, and Lone Star and I took a little tumble."

"I reckon *so*," said the sheriff, eying his companion. He made an ineffectual effort to extract something from the pistol pocket of his trousers.

"Here, 'Jonah,'" he said, "ye might take the trouble to git thet bottle out for me, bein' ez I'm crippled."

Durgy assisted him, and with some difficulty produced a beer bottle with a corn-cob cork. It was half full of a light-colored liquid. The sheriff drew the cork with his teeth and extended the bottle.

"This is one I didn't break yet," he said, facetiously. "It's a sort of 'silent comforter' thet I kerry always. Ef you've got any sense you'll give it an introduction to your inside ez a counter-irritant."

"Thank ye," said Durgy. He extended his hand for the bottle. "Here's the hair all off yer head!" he remarked, with easy frontier humor, applying his lips to the bottle. "Say when!"

"When!" shouted the sheriff, anxiously noting the disappearing fluid.

Mr. Durgy stopped promptly, and restored the bottle.

"How does it strike you?"

Durgy laughed. "Well," he said, "seein' ez I don't owe my stomach any particular grudge, Joe, I may say it don't strike me at all."

"Ye never had no taste for the genooine article, 'Jonah,'" the sheriff responded, reprovingly. "This is A1 apple-jack, and no mistake. I reckon ye didn't see anything of Lou down by the river," he continued, tilting the bottle.

"Yes, I did," Durgy replied. "She was down there pickin' wild flowers," he added, boldly.

"Pickin' wild flowers, eh?" returned the sheriff, suddenly removing the bottle from his lips. "It's a nice time of year fur thet bizness. Why didn't ye say pickin' strawberries?"

"Waal, I didn't see any flowers, thet's a fact," Durgy rejoined, quickly, seeing he had made a break, "but thet's what she said she was doin', Joe," he added, ingenuously. "I didn't gainsay it."

"No!" said the sheriff, incredulously. "I reckon thet's one of Lou's 'fibs'—lies, I call 'em. Waal, this pickin' wild flowers and picknickin' gen'rally hez got to be stopped. Thet young gal is too much for me and the old woman, 'Jonah,'" he added, decidedly.

"Women generally are," said the other, with the air of a philosopher. "Now there was Mrs. Durgy; she was too much for *me*—she was too much for pretty near everybody, but I tried to make the best of it."

"Yes, I know," replied the sheriff, with appreciation; "but this is different. I know Lou's an attractive gal, and all thet, but I don't like her hevin' her own way so. She hez took a notion to goin' down by the river a great deal lately, and I don't know jest what's back of it. I may say thet my comin' down here every mornin' to kinder git my left hand in hez some bearin' on this very subject. I don't reckon to hev any son-in-law in my fam'ly thet I don't fancy. Sooner than thet, I'll do a little shootin', I reckon."

The sheriff brought his jimber jaws together with a click and an expression that were very convincing to Mr. Durgy.

"I see the way you feel about it," he replied. "Well, Joe, I must be goin'. I've got to get back to the ranch and put on some dry clothes."

"You have, eh?" ejaculated Mr. Townsend, turning again to the table on which his revolver lay. "Well, I'm sorry I can't go back to the house with ye. The fact is I 'ain't quit here fur the day yet. But now ye know my mind," he said, raising the revolver; "ef ye get onto anything in regard to Lou thet ye reckon I oughter know, I'll be obleeged to ye fur lettin' me in on the ground-floor."

Durgy strode rapidly away without replying to this request, and ere he left the grove the echoes were again busy with the rapid target practice of its crippled occupant.

As he approached the sheriff's cottage he beheld Lone Star tethered to the front gate and restlessly awaiting him. Not feeling that his recent efforts in Miss Louise Townsend's behalf had been particularly successful, he unhitched the animal, and throwing himself into the saddle, was riding away, when the opening door of the cottage and an eager hail caused him to draw rein.

It was the fair occupant of his thoughts, who ran out rapidly to meet him, but how changed since the misadventure of the morning! As if in appreciation of the fact that there were other eyes than those of her parents to remark her toilet, she had donned a smart dark blue gown, lavishly trimmed and beribboned, and fitting her plump figure so perfectly that it was difficult to realize that Miss Louise had been her own dressmaker. The fact that her tresses were scarcely yet dry had perhaps impelled her to allow them to fall in reckless prodigality all over her neck and shoulders. She was bareheaded, and as the impressionable Durgy with difficulty curbed his impatient horse, he was appreciatively conscious of the heightened color and altogether becoming dishevelment of the young woman running down to the gate.

"Say! how did you make out?" she panted as she reached it, and leaned eagerly over the white palings.

Mr. Durgy glanced at the roguish eyes, the white teeth flashing upon him between the parted lips, the excited interest of the young girl's manner, and an utter disregard for truth and veracity at once took possession of him. He saw that it was out of the question to disappoint the confidence he felt she already entertained in him.

"Oh, I did pretty fair!" he ejaculated, wheeling the impatient Lone Star about.

Miss Townsend gave a relieved sigh, and cast a killing glance at him over the top of the fence.

"Won't you get down and stay to dinner?" she demanded.

"Not to-day," Durgy replied, with a desperation that he felt necessary.

"Miss Lou" looked disappointed, but acquiesced. "Well, some other time, then," she said. "But what did pop say?" her curiosity returning. "Did he ask if I was down at the river?"

"Y-e-s," said Durgy; "he certainly did."

"And you said?"

Mr. Durgy took one more look at the siren face over the gate, and felt it was perilous to remain longer.

"Say?" he replied. "Why, what could I say, Miss Lou? *I lied, of course, like an honorable man.*"

He found his horse suddenly unmanageable, and dashed away in the direction of Wild Cat River, leaving the maiden gazing admiringly after him.

[TO BE CONTINUED.]

A NORTH-LAND FESTIVAL.

FROM out her mighty cornucopia the generous Goddess of Plenty has poured not glittering diamonds, nor the priceless fabrics of the loom, nor those rare treasures which make for happiness of kings: she sends a pulsing stream of gold instead, and, like a yellow North-land Nile, it leaves its rich alluvion upon the shores where men bend low in toil.

Never within the bounds of this Northwestern land's history has such magnificent proof of the kindness of Providence been shown before. At a time when the cruel wolf was at the door of many a farmer's home, when through the blight-stricken, drouth-deadened districts the spirit of ugly unrest, born of the lack of bread, was rife—at such a time the gracious sun and the gentle rain and the long-idle soil sent splendid relief, and to-day the harvest of the years has come.

Small wonder is it, then, that there should be rejoicing. Go where you will, unless it be in rare and narrow places, and you shall find the harvest of unusual, yes, of phenomenal importance. Under such circumstances the generous business men of the city of Minneapolis—easily the metropolitan city of the vast Northwest—irrespective of party or creed or peculiar economic views, joined in planning a harvest-home festival and industrial parade on a scale more magnificent than had ever been attempted in America before. It was planned not for Minneapolis, not even for Minnesota, but for the whole boundless Northwest.

Day by day since the plans first began to take shape the festival idea has been spreading and developing. In the hundreds of floats seen in the parade not alone the artistic side of the people's life was shown—for, strange as it may be to some Eastern ears, there is artistic sentiment and feeling even in the wind-swept prairies—but the commercial, the manufacturing, and, above all, the agricultural magnitude of the Northwest was grandly shown. The parade which moved along some of the principal streets of the city on the festival day, September 23d, was not only beautiful as a Southern mardi-gras is beautiful, but it was an object-lesson many miles long. While thousands upon thousands of dollars were expended in elaborate decorations, the lines of material progress were never for a moment lost from view. Nor was it a show of braggadocio; it was an honest exemplification of material growth, a heart-felt recognition of the bounty of Providence. An attempt at a description of the parade in detail would be futile. It was a parade many miles in length, taking several hours to pass a given point, participated in by States, by municipalities, by counties, by corporations, by business firms, by individuals. One float, or rather series of floats, represented in such succinct style both growth and wealth that some of the statistical matter may be here briefly given. An attempt was made to represent values in solid silver, but it was found this was impracticable, as the pillars or pyramids which were planned would be higher than the regulations as to the dimensions of floats prescribed, so the representations were made in gold. And lest some one may think this smacks of hyperbole, let these facts be noted:

The resources of the State of Minnesota for the current year—including under the term "resources" the wheat, oats, corn, and other products of the soil—were represented by a golden pillar or pyramid five feet by six feet at the base and eighteen feet and six inches high, which, if built of solid gold, at $224 per pound, would just equal the value of these resources, $150,000,000; and so with North Dakota, with its $140,000,000; and South Dakota, with its $130,000,000. Then as to particulars: the manufacturing of the city of Minneapolis represents a total for the year of $100,000,000; the wheat handled, $52,000,000, on a basis of only 75 cents per bushel; the flour, $40,000,000; the jobbing interests, $230,000,000; the lumber interests, $6.000,000. The assessed—not real, but assessed—valuation of the city was shown to be, in 1870, $4,000,000; in 1880, $28,000,000; in 1891, $150,000,000—the actual valuation being more than twice this amount. On one float was shown an elevator, which, if built of solid gold to represent the wheat raised in Minnesota and the two Dakotas, would be, as the representation indicated, five feet by ten feet at the base and twelve feet high. The acreage of wheat in Minnesota this year was 3,360,000 acres, which, at the estimate the most pessimistic have sanctioned—18 bushels to the acre—gives, at $1 per bushel, the valuation of the wheat crop of the State in 1891, $60,500,000; oats had an acreage of 1,500,000, valued at $25,000,000; corn, 282,000, valued at $12,500,000; while the other products, such as rye, flax, the grasses, etc., reach $52,500,000. No showing was made as to the dairy interests, which in Minnesota this year reach nearly $60,000,000. The clearings of Minneapolis for the year ending September 15, 1891, were $335,157,000, a showing which was made with great interest. But enough of statistics: their story, though, prosaic as you please, is pregnant with power and promise.

The space allotted to the lumbermen was one mile in length. Elaborate floats representing the varied phases of this gigantic industry were shown. One of them was specially attractive, a miniature logging camp, just such a balsamic, piny place as may be found in many a wilderness in the northern part of the State of Minnesota. The piece was worked out in fine style—the cabins, the log-piles, the sledges; even the camp utensils and the tarnished stove-pipe were there. Another float was a gigantic lumber-pile decked out with flags, drawn by a team of 60 horses. Great enthusiasm is manifested by those gentlemen who have been instrumental in securing the appropriation for the dredging of the Mississippi between Minneapolis and St. Paul; and as the work is now in active progress under the government engineers, it was thought fit to represent Minneapolis as the head of navigation by a steamboat fully equipped and manned.

In the line of beauty there was much to admire. Many floats were handsomely painted allegorical representations. At every possible point was shown that which in any way typified the harvest. Sheaves of wheat, the time-honored sickle, all manner of fruits and vegetables—everything that in any way indicated the treasures of the harvest was drawn on for the treatment of these allegorical pieces. The humorous side of life was not neglected either, and while there was a commendable absence of cheap buffoonery, there was yet a charming showing of wit. In all the mottoes, however, there was nothing which could in any way be said to reflect upon the citizens of the neighboring city of St. Paul. Special mention of such a fact might seem singular to one unacquainted with the fierce spirit of rivalry between these two young giants.

By those who are aware of this rivalry, however, the decision of the committee in charge to allow nothing in the parade which should be satirical or even discourteous to the neighboring city will certainly be commended. A large number of the mottoes shown were what might be termed epitomized evidences of prosperity. The magnificent crops, never equalled in the Northwest since the first wheat grains were nourished into life; the marvellous advance of the city in which the festival was held; the general prosperity which has so signally blessed this portion of the land; the marked industrial as well as strictly municipal advancement; the progress and the importance of sister States—all these were not only shown in the floats, but were set forth on jubilant banners, more glorious gonfalons than ever led hosts to red fields of battle.

And the decorations—it were idle to attempt description. Wherever there was opportunity for the display of the national colors, there the splendid standard was unfurled; wherever bunting of any kind could be used, it was artistically draped. All along the line of parade the merchants, and in the outer portion of the city the residents, decorated their stores and dwellings in most taking styles. One merchant, with an immense store, covered the whole front, from pave to cornice, with sheaves of wheat.

A splendid, stately spectacle was this North-land parade. Nothing more magnificent, nothing more beautiful, nothing more instructive, nothing more appreciative of the goodness of Almighty God, ever yet was shown in the streets of any city on the continent.

Early in the movement which resulted in this festival it became apparent to many of the projectors that it would not in the fullest measure be successful without some recognition of that Providence which had made the festival possible. So arrangements were made for a thanksgiving praise service, which was held on the morning of the festival in the Grand Opera-house. Marked interest centred in this feature of the day. In a city which takes rank as the leading city of its size in America in point of churches and church population, it was specially fitting that such a service should be held. The invitations to participate were on the same catholic basis that has been at the foundation of the entire festival. All denominations were invited, and nearly all gave prompt acceptance. A Hebrew rabbi and a stanch Episcopalian, a Unitarian of ultra type and a Scotch Presbyterian, a pronounced Universalist and a set Baptist, a Lutheran prelate and a Congregational minister, all sorts of denominations in elbow contact, while to every Catholic priest in the diocese went cordial invitation to be present. On a platform where sat the representatives of the stricter orthodox sects presided a Universalist, the Rev. Dr. Tuttle, pastor of the Church of the Redeemer. There was singing of harvest anthems by a large chorus; the surpliced choir of Gethsemane Episcopal Church sang the beautiful festival service of that denomination, the great congregation joined in thanksgiving songs, while eloquent addresses and fervent prayers gave their meed of tribute to the Giver of All.

By proclamation of the Mayor the day was made a general holiday, all manner of business being suspended, while the common schools and other educational institutions closed their doors. The holiday spirit was everywhere predominant. There is a wonderful refreshment in the manner of these Western people. When it was proposed that grand stands be erected along the parade line, a fee being charged for occupancy, the proceeds to be used in defraying in some measure the enormous expense of the festival, there was a patriotic provision to this effect: that upon any man who should rent his windows or his private grounds for hire the common condemnation of all reputable people should fall.

The industrial exposition of the city is now open. So, to give a sister institution a helping hand, it was decided to have that, to many, interesting event, a barbecue, holding it upon the grounds of the exposition in the evening, in order that the people might be attracted to the exposition, and thereby increase the revenues. When the festival spirit became more and more rife there must be, of necessity, some badge to distinguish the day from all others. Over eighty thousand of these badges were cut, printed, and distributed free of charge nearly a week before the festival opened. A neat aluminium medal was struck, bearing upon its obverse the words "Minneapolis Harvest Festival and Industrial Parade, September 23, 1891," encircled by wheat stems, while upon the reverse were the names Idaho, Washington, Oregon, Montana, North Dakota, South Dakota, Minnesota, Wisconsin, Iowa, and Nebraska, arranged on slender disks about a central word "Welcome."

The permanent organization of the festival comprised a president, Mr. George A. Brackett, one of the oldest and most prominent as well as public-spirited citizens of Minneapolis; a vice-president, Colonel W. S. King; secretary, F. H. Forbes; and a committee of fifty prominent citizens, to which was added twenty-five special committees.

W. S. HARWOOD.

THE RUSH TO OKLAHOMA.

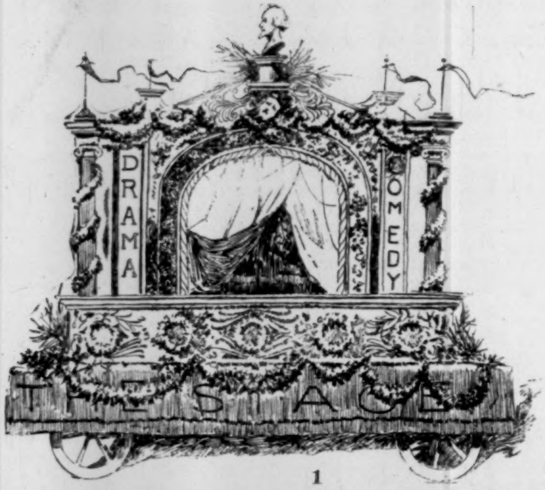
BY the proclamation of the President, and in accordance with a law passed by Congress several years ago, there was thrown open to settlement in Oklahoma Territory a large tract of land formerly belonging to the Indians. From the Sacs and Foxes were taken 472,000 acres; from the Iowas, 229,559 acres; and from the Pottawotomies 400,000; making 1,101,559 acres in all. From this, as each Indian buck is entitled under the law to a quarter section, or 160 acres of land, and certain other sections are reserved for school purposes, about 300,000 acres were deducted on these accounts, therefore an area of about 800,000 acres was open for settlement. This gave room for 5000 homesteads. Long before the day appointed for the opening of the country people began to flock to the towns nearest to the frontier, and by the time it was lawful for them to move into the new territory there were at Guthrie alone a very great many more people than could possibly be provided with homesteads. At Oklahoma City there were almost as many more. Notwithstanding the efforts of the United States marshals, aided by the military, a great many men slipped across the line, so as to select good locations, and hold them till confederates should come in after the proclamation of the President went into effect and take possession. These illegal methods will, for a time at least, cloud the title of such settlers and speculators, and the practice of the law is likely to be the briskest business in the new country for some time to come.

Two years and a half ago, when the now settled part of the new Territory was thrown open, there was a similar rush, attended by much disorder, some loss of life, and untold suffering on the part of those who unprepared had gone into a wild country, which, until crops had been planted and harvested, could support no population at all. Only a small fraction of those who went out in 1889 remained, and that is likely to be the case with the 100,000 people who madly rushed into the wild lands the other day. In this instance, as formerly, the great majority of the "rushers" were not *bona fide* homesteaders, but speculators, who had no other object than to take claims and sell them out to those less fleet of foot than themselves. Those who go into a new country before it is lawful to do so are called, in the picturesque language of the frontier, "sooners." It is estimated that there were 3000 of these within the new section when the mad rush began. If that be so, there were only 2000 homesteads left for the multitude which crossed the line last week. The Indians entitled to quarter sections were lawful "sooners," and very naturally they must have selected the best lands in the country. The unlawful "sooners" probably had the second choice. Not all of the new country is desirable farming land, and therefore many of those who are fortunate enough to get quarter sections will find themselves on land of that character the more of which one owns the poorer he is.

At various places along the borders of the new country camps were established by those who arrived before the time appointed for the entrance. As the time approached they were all ready for the start, and at twelve o'clock on the 22d of September, when the signal was given, they hurried away in a mad race for land. Those on horseback were soon far ahead; then came the people in wagons; and far in the rear followed those who were too poor to get horses and were obliged to walk. There were very many of these, and what their expectations can be as to the future it is hard to say. Conspicuous in these camps, and also in the race when it began, were the adventuresome women, who were as keen as the men in their anxiety to locate claims. Some of these had horses, some had wagons, and some others were obliged to tramp on in the rear. At the village of Langston, some eighteen miles from Guthrie, and just near the border line, were congregated 2000 negroes, the majority of whom had been induced to go there by N. P. McCabe, ex-Auditor of Kansas, who is said to have already made money handsomely out of his scheme to start a colony of his race in the new Territory. Very many of these negroes will suffer great hardships, as nearly all of them are very poor, and inadequately supplied with provisions. But their situation is no worse than that of the white people in similar circumstances, with the exception that some of the ruffians among the cowboys have declared war against the negroes, and have said that they will not be permitted to locate their settlement in the Cimarron Valley, which is known to be the most fertile part of the newly opened section. This, however, is probably only a boastful threat, and will amount to nothing.

The government surveyors have located and named two towns—Chandler in the north, and Tecumseh in the south. Postmasters were appointed for these towns before they were settled. In forty-eight hours after the start was made from the border line each one of them had within its limits many thousand persons seeking to locate town lots. In both these places until wells have been dug there is likely to be great suffering from a lack of drinking-water. At Chandler, on the 24th of September, the suffering from lack of water was already great. Tohee, an Indian village just over the border of the Iowa country, was converted very rapidly into a town of 1500 white people. A land company from Guthrie had its eye on this place, and moved in force upon it at the earliest moment. During the afternoon of the first day representatives of this company returned to Guthrie, filed a map of the town at the Land Office, and announced that Joseph McNeil, president of the First National Bank and City Marshal of Guthrie, had been chosen Mayor of the new city of Tohee. This movement was conducted by persons of experience, and the new settlement was made quietly and in order.

This rush to Oklahoma can only be accounted for by the reputation given to these reservations by those who for many years ineffectually attempted to secure them for settlement. It was said then that the lands were the most fertile in the United States. This was a great exaggeration, for while portions of the lands are unquestionably very rich, others are extremely poor. There are other lands still to be thrown open within a little while in the Indian Territory, and further west broad tracts have been opened by proclamation this year. In these tracts there is still room for many settlers. The legislation enacted by the last Congress in the ratification of treaties with various Indian tribes provided for the opening to settlement of over 8,000,000 acres of land in the vicinity of Oklahoma, and in the Dakotas, Montana, Idaho, and Colorado. When the Cherokee outlet of 6,000,000 acres shall be ceded, when the Southern Utes shall give up their reservation of 2,000,000 acres in Colorado, and when the other tribes that still hold tens of millions of acres shall be ready to negotiate for the sale thereof, there will be new homesteads for pretty nearly all the Americans who have a taste for a frontier farmer's life in a new country. JNO. GILMER SPEED.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THE STAGE

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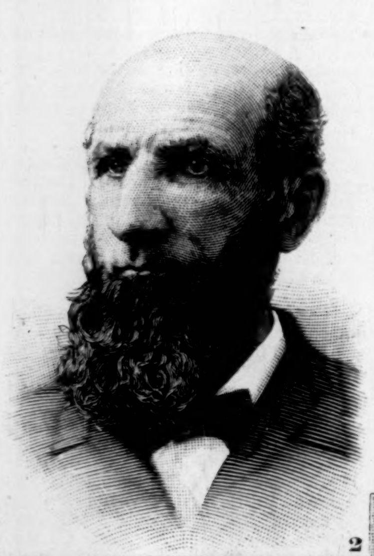

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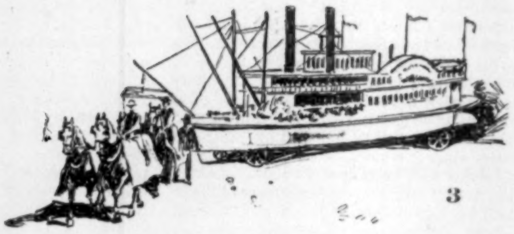

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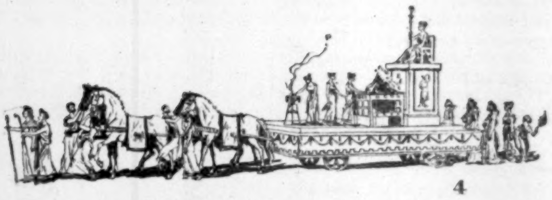

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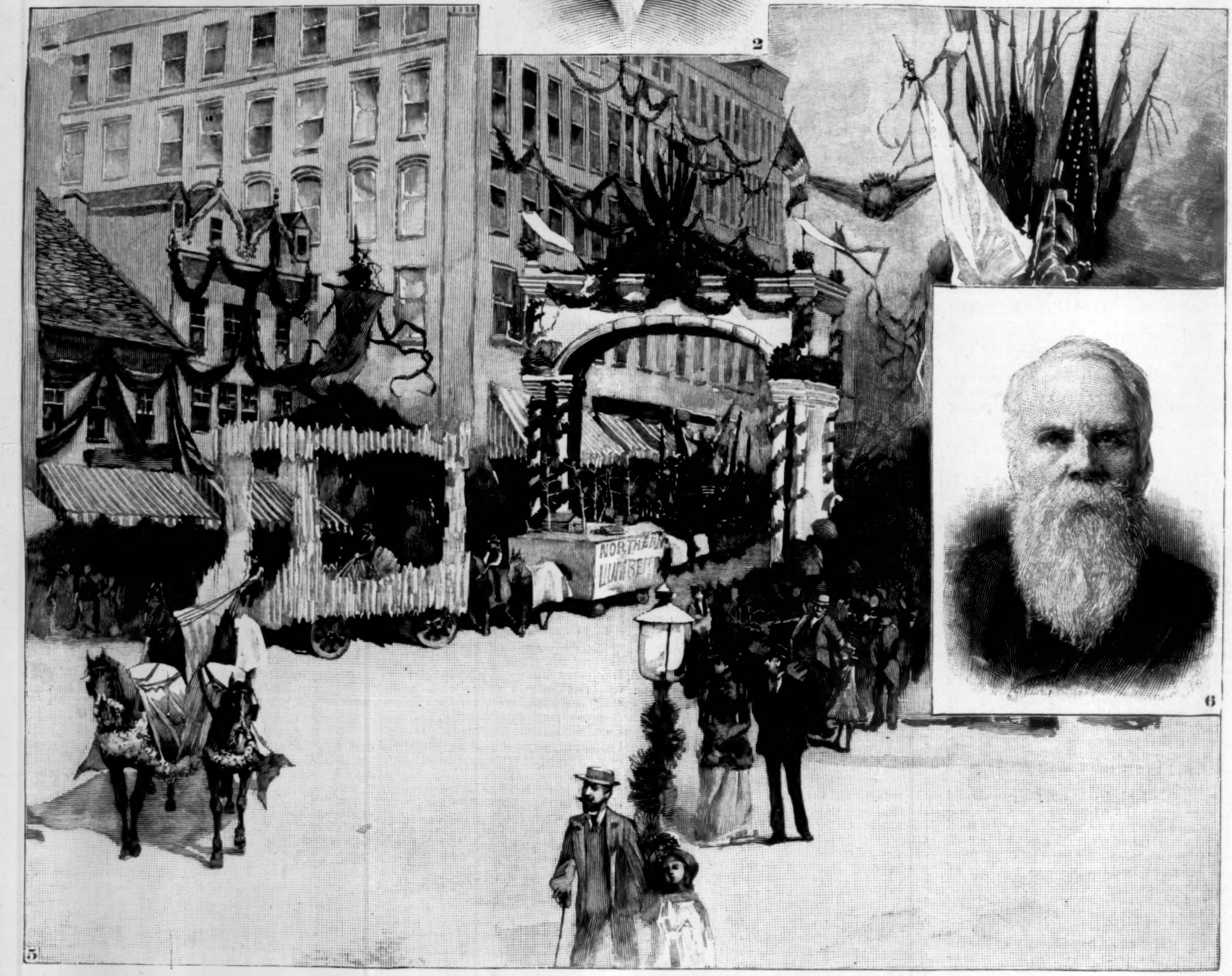
NORTHERN LUMBER

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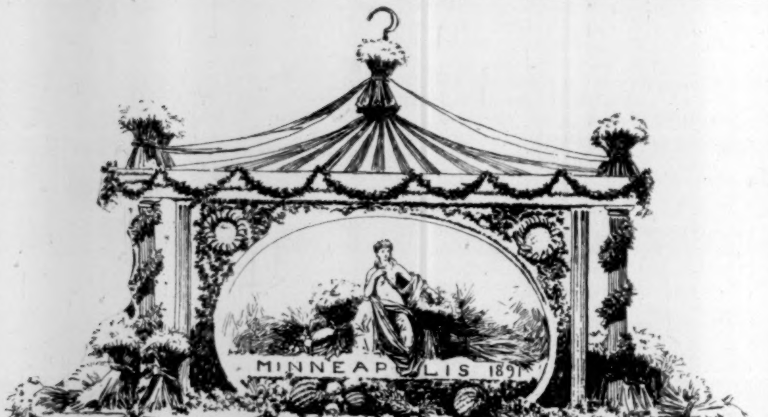
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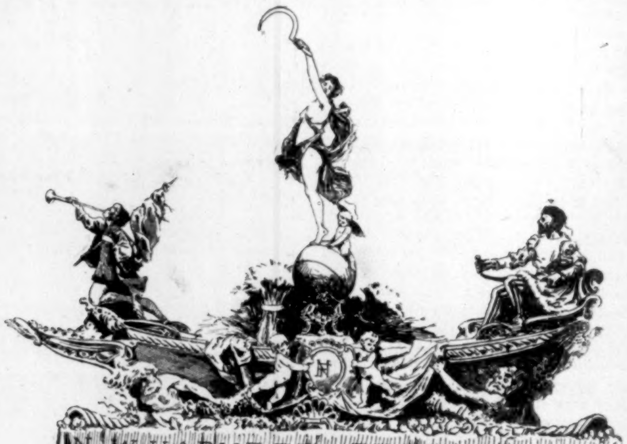

HARVEST FESTIVAL 1891

8

THE MINNEAPOLIS HARVEST FESTIVAL.—After Sketches by A. R. Hurtt.—[See Page 747.]

1. "The Stage." 2. George A. Brackett, President Permanent Organization, Harvest Festival. 3. A Mississippi Steamboat. 4. Real Estate. 5. A View of the Procession at Nicollet Avenue and Fifth Street. 6. Colonel J. H. Stevens, the first white Settler of Minneapolis. 7. The City of Minneapolis. 8. The Festival Float.

THE TELEPHONE IN NEW YORK.

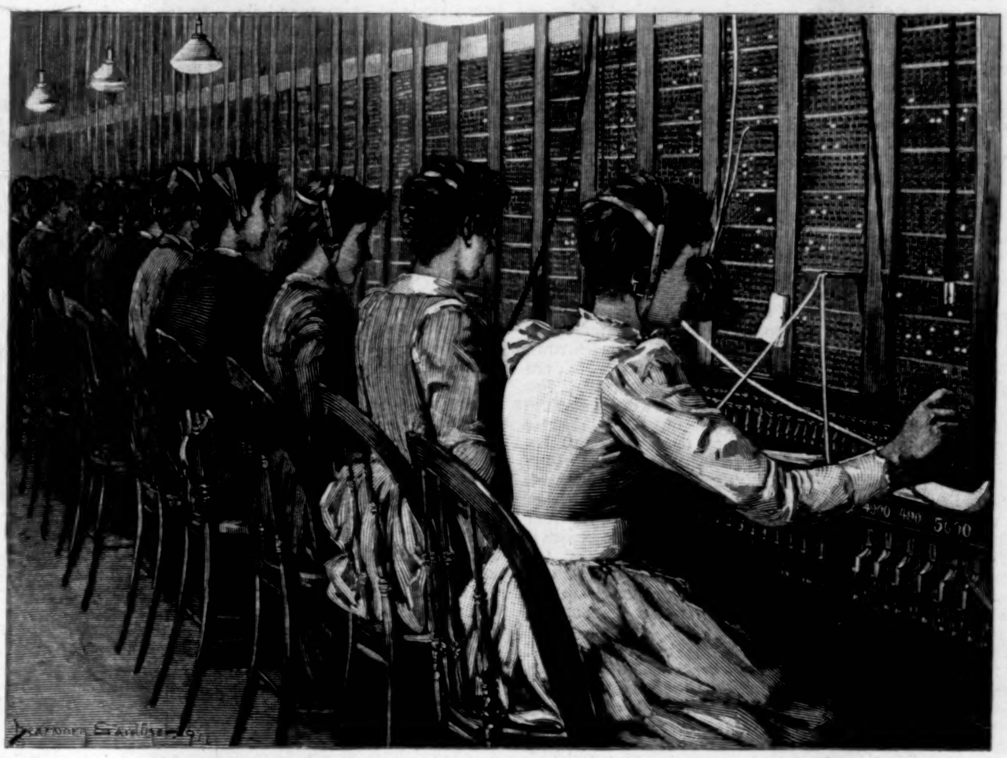
BY HERBERT LAWS WEBB.—ILLUSTRATED BY H. DEARBORN GARDINER.

THE disastrous snow-storm of January 25th of this year, which wrought such havoc among the telegraph and telephone wires in and around New York city, demonstrated very clearly and emphatically one interesting fact, and that was, or rather is, that the telephone is to-day an absolutely indispensable portion of the machinery of a great business centre such as New York. No doubt this view of the usefulness of the telephone needed no such violent confirmation as was afforded by the sudden interruption of more than one-third of the total number of lines operated in New York; but the storm came and the wires fell, and the subscribers deprived of communication made bitter complaint. They complained by the score and by the hundred, and backed up their complaints in many instances with statements to the effect that without the telephone they could not transact their business in the accustomed manner, and that they were losing hundreds of dollars a day because they could not raise "Central," or anybody else, over their telephones.

The storm of January, then, which was even more disastrous to electrical property than the more famous blizzard of three years ago, proved beyond peradventure that the telephone is to-day one of the necessities of business life. The telephone exchanges of a great city may be compared to its banks in regard to the facilities they afford for the transaction of business; what the banks do with bills and drafts, the telephone exchanges do with thought and speech. Probably the failure of an important bank causes more widespread loss and injury than can possibly be caused by the paralyzation of the telephone service, but it would not be going too far to say that the loss incurred by the subscribers, due to derangement of business during the few days' general interruption which followed the January storm, would have paid for a year's rental of every telephone line in the city. This is entirely apart from the loss to the telephone company itself, which, as may readily be imagined, amounted to a very respectable figure.

The maintenance of telephone service in a city like New York is a work of the first magnitude, and but few members of the general public can have more than a faint idea of the extensiveness of the plant, or of the complexity of the problems connected with its design and construction, or of the perfect organization necessary to unite all the various nerves and members of the system into one harmonious whole, and preserve it in proper working order from day to day.

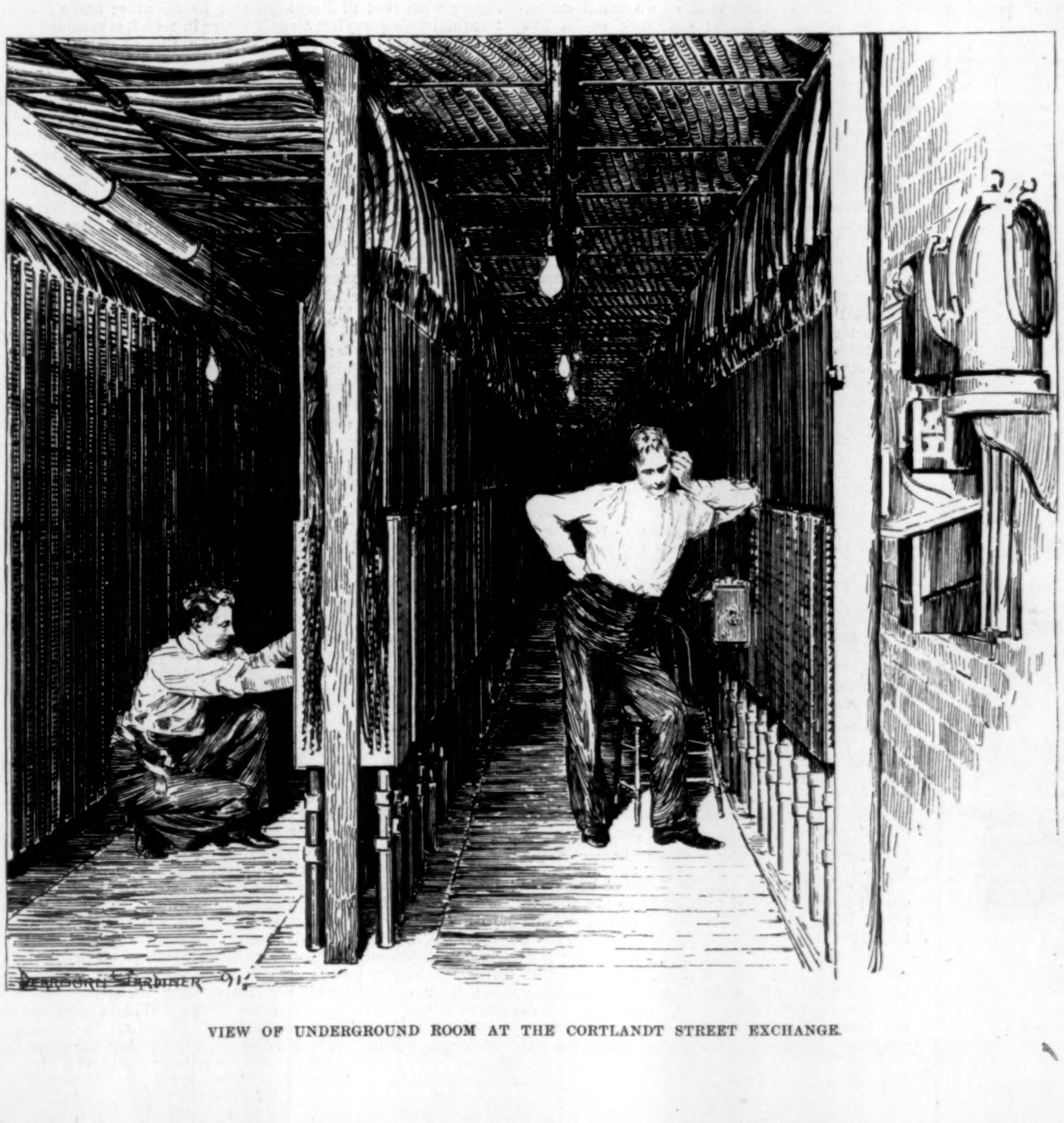
We are now going to make a tour of inspection through the whole system, and consider it step by step and point by point. Starting from a subscriber's station, we find a set of instruments fastened to the wall and connected to a pair of wires, which lead in from the lines that radiate from the central office. This set of instruments contains a generator and bell, with which to transmit and receive calls for attention, a transmitter for speaking, a receiver for listening, and a battery to energize the transmitter. The generator consists of a small alternating current dynamo, which is set in motion by the crank at the side of the box; when the crank is turned, current is generated in the coil of fine wire wound on the spindle to which it is connected, and this current is conveyed along the line to produce a signal at the distant end. In the same box is an electro-magnet which acts on a hammer, causing it to vibrate between two gongs when a current is sent through the line from the central office, or from the generator of some other subscriber. Thus the mechanism of the bell consists of a small hand-generator of electricity for sending out calls, and a vibrating bell for receiving them.



A PART OF THE MULTIPLE SWITCHBOARD AT THE CORTLANDT STREET EXCHANGE.

The transmitter is made up of several elements. Its function is to transform sound waves into electric waves, which are afterwards reconverted into sound waves by the receiver. The battery is brought into play to furnish the electric waves; but the current from the battery when used directly is not sufficiently highly wrought, so to speak, to carry to a distance the minute changes that are impressed upon it by the air waves. The battery current is therefore transformed in the transmitter by means of an induction coil into a current of higher tension, more sensitive to changes, and thus capable of producing greater effect in the distant receiver than if the battery current were used direct. This induction coil is made of two lengths of wire of different thicknesses wound about an iron core or spindle. The ends of the thicker wire are connected to the battery and to the carbon contacts attached to the diaphragm of the transmitter, and when a current is allowed to pass through this wire, another current immediately appears in the second; this effect is due to the mysterious phenomenon called induction. This secondary or induced current is sent out to the line, and by it are produced the telephonic waves which operate the receiver at the distant end.

These waves are variations or undulations in the strength of the current, and they are caused by the vibrations of the diaphragm acting on the battery current, every change in the strength of the battery current being accompanied by a corresponding change in that of the secondary current. The vibrations set up in the diaphragm by words being spoken in front of it are communicated to two small springs fixed at the back. To one of these springs is attached a carbon button, and to the other a platinum contact point; the button and the point are normally in gentle contact with each other, but the pressure or intimacy of the contact is, of course, constantly varied as long as the diaphragm is vibrating under the influence of sound waves. The button and point are included in the circuit of the battery and primary wire of the induction coil, and the resistance of the carbon varies constantly with the varying pressure brought to bear upon it by the vibrations of the diaphragm; these variations in resistance produce changes in the strength of the current, and these changes are faithfully reproduced in the induced current set up in the secondary wire of the induction coil. Thus we clearly see how sound waves are transformed into electric waves through the medium of the telephone transmitter, made up of vibrating diaphragm, yielding contacts, battery current, and induction coil.



VIEW OF UNDERGROUND ROOM AT THE CORTLANDT STREET EXCHANGE.

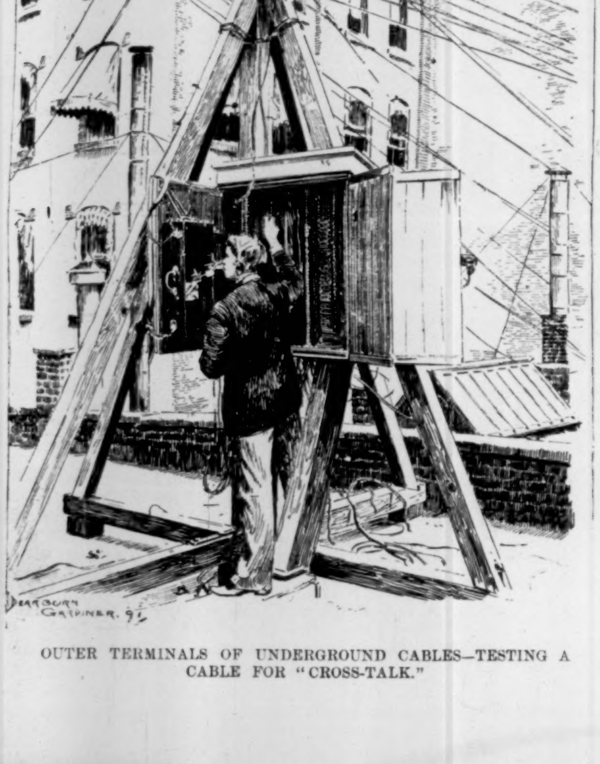
The electric waves are retransformed into sound waves by the receiver, which is the original telephone invented by Professor Bell, about which has been built up such a vast industry. The Bell telephone consists of a steel magnet, which carries at one end a small spool of insulated copper wire. Opposite this end of the magnet is fixed a thin diaphragm of sheet-iron. This iron diaphragm is normally attracted toward the magnet. When a current circulates in the spool of wire, the force with which the magnet attracts the diaphragm is modified, and a movement of the diaphragm is set up. A current consisting of a number of electric waves of varying strength will, of course, produce continual changes in the attraction between the magnet and the diaphragm. This action results in the diaphragm being set in vibration, and these vibrations must necessarily correspond with the electric waves that produce them. We have already seen that the electric waves in their turn correspond with the sound waves actuating the diaphragm of the transmitter, so it follows that the movements of the receiver diaphragm will produce similar sound waves to those originally set up in the neighborhood of the transmitter.

Having now seen how speech is communicated from transmitter to receiver by analyzing the functions of the various parts of the set of instruments supplied to each telephone subscriber, we can set out on our journey to follow the quivering telephonic current in its devious course along wires and cables and amongst central office apparatus, as it finds its way from speaker to listener. In New York city a subscriber's line may be either wholly or partly underground. To many of the large office buildings underground cables are run direct from the down-town exchange. Each of these cables contains a hundred wires, the conductors being twisted together in pairs to counteract the effect of induction between wire and wire, which is so frequent a cause of the foreign noises sometimes heard in telephones. Each pair of wires accommodates one subscriber, therefore one cable provides conductors sufficient for fifty subscribers. The underground cables radiate from the exchanges in all directions, and each one is terminated at a point from which a group of subscribers can be conveniently reached. Some of the cables terminate in the basements of the large office buildings, a sufficient number of subscribers being often found in one building to fill up an entire cable, and sometimes more than one. Others are terminated on house-top fixtures, from which overhead wires are run to the subscribers' offices. In a few cases the cables are run to large terminal poles, at which the wires from a scattered district concentrate.

The underground cable portion of the telephone system in New York is the largest plant of this description in the world, and a detailed examination of it will be well worth while. Starting from a subscriber's telephone, we find near the top of the back-board a couple of terminals or binding-posts, to which a pair of insulated wires is attached. These wires are led to the nearest underground cable terminal. Perhaps there is a terminal in the cellar or on the roof of the building, in which case the wires are taken to it by a secure route along the walls and shafts. Perhaps the cable terminal is on another roof in the same block, or, in a neighborhood where there are few subscribers, on a gigantic pole, to which air lines converge to dive underground. Then a short length of overhead line carries the subscriber's wires to the terminal. The terminal itself consists of a long iron box hermetically sealed to protect the cable from the inroads of moisture, and provided, either on the front or at the sides, with rows of brass binding-posts. To these binding-posts, which are insulated from the iron case by a sleeve of hard rubber, the wires of the cable are permanently attached within, and the subscriber's wires are connected on the outside in regular order, the binding-post thus forming a connecting link between the lines leading to the instrument and those which go underground to the exchange. There is another connecting link in the box, which protects the cable terminal from the weather, and this is the lightning and strong-current protector. This little device is inserted in the line before it enters the cable, its special function being to protect the lines and instruments from the assaults of lightning and other vagrant and powerful currents which sometimes stray into wires, where they have no other mission than one of damage and destruction.

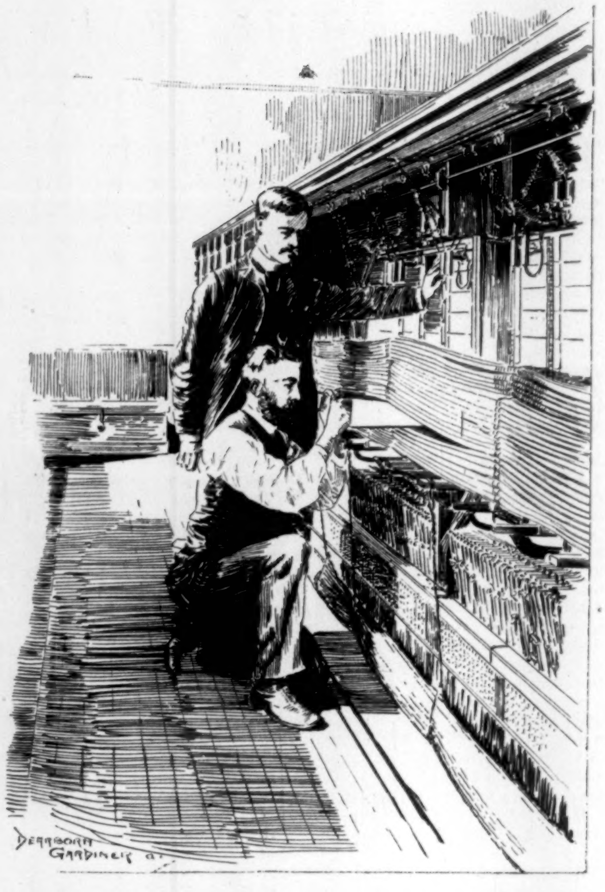
The underground cable itself is a very important part of the telephone system of to-day, and a great deal of ingenuity, time, and money has been expended on the production of a type of cable suitable for telephone work. The telephone current is a very delicate form of energy, and it has to be surrounded by the best of conditions in order that it may live and thrive and put forth its best efforts. It thrives best in the free air on top of an eighty-foot pole, above trees, whose leaves seek to lead it astray, and far from other wires, whose strong currents fain would tyrannize over it, and substitute for its timid undulations harsh and unintelligible grumblings and roarings and mutterings of their own. Forced underground, it is choked and muffled and subdued, like human life in a dark cellar or crowded tenement, and in the revengeful spirit aroused by uncongenial surroundings it becomes perverted, and indulges in "cross-talk" with the neighboring wires, to the close proximity of which it is unwillingly condemned. But underground, in cities at least, municipalities have obliged it to go, and telephone men have had to make the best of the situation.

The underground telephone cable is made up of a large number—generally one hundred—of fine copper wires. Each wire is insulated by a wrapping of cotton or paper, and the insulated conductors are then twisted together in pairs. This twisting is done as a preventive of induction or "cross-talk" between wire and wire, as, if two wires are parallel with each other for any distance, a current travelling in one will set up a current in the other by induction. The fifty pairs of conductors are made up into a flexible cable, which is incased in a lead pipe, and the cable is made. Almost every New-Yorker has seen these cables being drawn into the subways under the streets, and these operations were illustrated in HARPER'S WEEKLY for July 27, 1889. The cables, which are very heavy, are drawn in from man-hole to man-hole, a splice being made at every man-hole. At the terminal points—that is, at the exchange and in the cellar, or on the roof of the building, or on the pole to which the cable is taken—the ends are opened out and encased in the iron boxes already described, each conductor being connected to its corresponding binding-post. The cover of the cable head is then screwed on, and the cable is ready for use.


DEARBORN GARDINER. 91.

OUTER TERMINALS OF UNDERGROUND CABLES—TESTING A CABLE FOR "CROSS-TALK."

Before it is put into service every cable is subjected to exhaustive electrical tests for the purpose of ascertaining whether it complies with the required standard. Each conductor in it is tested by several different methods, and upon the average results of these tests, falling within or beyond certain well-defined limits, depends the acceptance or rejection of the cable by the telephone company. Perhaps some slight defect in the manufacturing process has affected the electrical conditions of the cable, or it has suffered injury to the lead covering during laying; the injury might be so inconsiderable as to pass unnoticed by the men handling the cable, but if the lead were punctured, moisture would penetrate to the conductors, rendering them unfit for service. In any case the electrical tests tell the whole story, and immediately reveal anything abnormal in the condition of the cable. Besides these tests another very searching one is made on all cables put down, to discover whether there is any "cross-talk" between the different pairs of wires. A man is stationed at each end of the cable, and, beginning with the first pair of wires, a "buzzer" is connected to that pair, and the men meet each other with telephones and listen for the hum of the buzzer on every successive pair. The buzzer is moved on step by step until every pair of wires has been tried against every other. In case induction is found between any two pairs, telephones are connected to each of them to try if conversation can be carried on from one pair to another. If such were found to be the case the cable would be rejected, or one of the faulty pairs left out of service; but so great has been the progress made in cable manufacture that serious "cross-talk" is very rarely found in the cables now put down. These electrical tests form a very important part of the work of the electrician's department of the telephone company, and a large portion of the staff is constantly occupied in making the tests, and entering up the records which tell the electrical history of the hundreds of cables in use.



MAKING REPAIRS AT THE BACK OF THE MULTIPLE SWITCHBOARD.

Where the cables concentrate and are brought into the exchanges they naturally form a heavy and somewhat unwieldy mass of material, the methodical disposition of which, while very necessary in order to maintain the efficiency of the service and to allow for extensions and repairs, constitutes an engineering task of no small order.

At the Cortlandt Street exchange about 160 cables are terminated. The subways end in a large vault under the sidewalk, from which the cables are led under a false flooring into a large apartment known as the "underground room." Part of this room is divided into three long alleys by upright iron supports to which the cable heads are attached. There are five rows of cable heads, and from these solemn-looking iron boxes 16,000 slender copper wires radiate under the streets to carry electrical speech from house to house. It is a complex undertaking to connect all these wires with an equal number of other wires leading up to the switchboards, but it is accomplished in the most systematic manner by means of a very flexible intermediate link in the succession of connections through which the telephone current finds its way to its destination.

In the central alley is placed a huge iron framework of rods and tubing; this subdivided cage is over 30 feet long by three feet wide and about nine feet high. On either side of it are long rows of tiny metal plates mounted on strips of insulated material; each little plate forms a connecting point for two wires, which are firmly soldered to it. To the plates on one side of the framework, which is technically known as the "distributing-board," wires leading to the underground cables are permanently attached; and to the plates on the other side the wires from the switchboard are soldered in regular order. Every plate on the one side corresponds to a certain conductor in an underground cable, and every plate on the other side corresponds to a certain number in the switchboard. Therefore to connect a subscriber's line to the switchboard it is only necessary to run wires through the framework and attach them to the metal connecting plates required on each side. The distributing-board is so arranged that the connecting wires follow certain definite courses, or "runs," vertical and horizontal, and the wires can be drawn out and rearranged whenever changes in the connections are required, ample space being left in the framework at all points for the men to reach and handle the wires.

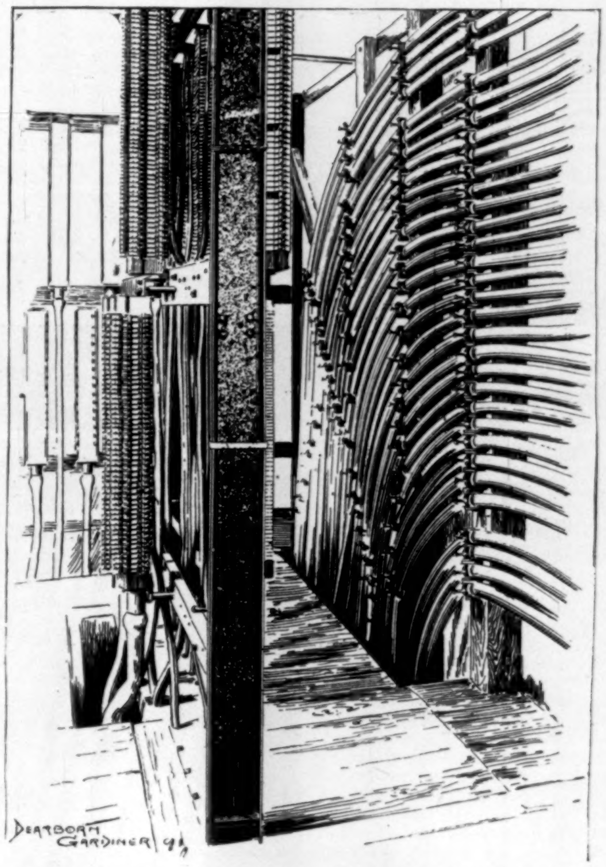
The cables at the Cortlandt Street exchange are all headed up and connected to the switchboard wires in the basement; but it has been found that the work of making these connections can be better supervised, and the service rendered freer from interruptions, if the distributing-room is made a department immediately adjoining the operating-room. Consequently in the new buildings the cables are carried up a shaft to one of the upper floors, either the one on which the operating-room is situated or the one next below it, and the cable heads and distributing-board occupy well-lighted quarters closely contiguous to the switchboard itself.

Mr. Gardiner has shown, in those of his drawings relating to the underground-cable system, a portion of the underground room at the Cortlandt Street exchange, in which one of the long alleys of cable heads and part of the distributing-board are seen; a house-top fixture, where two underground cables terminate for distribution to subscribers (the figure in this picture is in the act of testing a cable for "cross-talk"); the cable run at the Spring Street exchange, where the cables emerge from the subways to approach the shaft leading up to the terminal room; the terminal room at the Spring Street exchange, showing the cables curving out of the shaft to reach the frameworks which support the cable heads; a view in the centre of the Brooklyn Bridge, showing the cables which connect the telephone systems of New York and New Jersey with that of Brooklyn and its suburbs; and a large terminal pole carrying a cable tower in which several cables are terminated to accommodate the numerous overhead wires of the pole line.

The underground telephone system of New York city is far more extensive than most New-Yorkers would imagine. It reaches from the Battery to the Harlem River, and one could talk from the Barge Office to the bridge at the end of Third Avenue entirely through underground cables. There are about 350 separate cables, containing an aggregate length of not much less than 30,000 miles of conductor. Every exchange—and there are six of them, namely, Cortlandt Street, Spring Street, Eighteenth Street, Thirty-eighth Street, Seventy-ninth Street, and Harlem—reaches its subscribers by means of underground cables, not an overhead wire entering any of the buildings except at Harlem, and all these exchanges are connected by cables, which are underground everywhere except across the big bridge, with the main central office in Brooklyn.

From the cable terminals we pass to the operating-room, the brain of the wide-spreading system of wires and instruments, where the electric nerves communicate their pulsations to other nerves, and human intelligence directs and assists the workings of the imposing collection of electrical and mechanical devices massed into one harmonious machine. Here is truly one of the most wonderful developments of this scientific age. Sitting in front of a long narrow counter, attached to what appears to be a tall mahogany partition pierced with myriads of small holes, supported below by tiers and tiers of little metal shutters which fall and click and rattle with continual fitfulness, are nimble-fingered and nimble-voiced young women, whose sole occupation is to make appointments for talkative mortals who must needs annihilate distance to discuss their affairs of business and of pleasure. These young women with the deft touch, the ready tongue, and the quick ear are "Central"—the "Central" that the idle young man tries to flirt with, whom the impatient boor swears at, and the busy man of affairs recognizes as one of his best friends.

The work of "Central" is not quite so simple and straightforward as the average telephone subscriber generally appears to imagine. She is not waiting all day with one eye on the little shutter which he lets fall when he rings up, and the other on the wire of the man he wants to talk to, ready to make the connection before he has barely spoken the number. That is what most subscribers would like, and seem to expect, but it is only fair to state that "Central" cannot possibly do it. She has to look after a certain number of subscribers, fifty, sixty, seventy-five, even one hundred, according to the size of the exchange and the nature of the business. Each of these subscribers she serves to the best of her ability, and all alike. If several call up together, or a few seconds apart, they must wait their turns just as they would if they were buying stamps, or theatre or railway tickets; but "Central" is quick, and they generally get their connections with less waiting than they would have to put up with at the ticket offices. When a subscriber calls up, "Central" connects her telephone set to his line, and asks, "Number?" Having got the number, she spies it



CABLE SHAFT LEADING INTO THE TERMINAL ROOM AT THE SPRING STREET EXCHANGE.

out among the little holes in the board, which are all numbered consecutively, taps the rim of the hole with a plug to see if the line is being used already, and if not she pushes the plug home, and the connection is made.

The multiple switchboard is a wonderful device. It is called "multiple" because it is really a multiplication of one switchboard or section, the various sections being joined so as to make one continuous "board." The multiple board at Cortlandt Street is the largest metallic circuit switchboard in the world; it has an ultimate capacity for handling 6000 metallic circuit subscribers' lines. A short description of it will make clear the operation of the multiple board.

The wires which pass through the board are connected at the rear to the "spring-jacks," little tubes with metal springs to which the wires are attached. The spring-jacks are accessible to the operators through the holes in the board, the ends of the spring-jacks being flush with the face of the board. Each section of the switchboard has 6000 of these spring-jacks, all numbered consecutively, and the wires are so arranged that the spring-jacks in each section bearing the same number are all connected together. It is obvious, then, that every subscriber's line has a spring-jack in every section of the board, and consequently any one of the 6000 lines can be reached by any and every one of the operators working at the switchboard. Before the multiple system was invented, a subscriber's line was accessible at one point only, and connections between different parts of the board were made by auxiliary wires, a process which was slow and expensive, and by which only a limited number of subscribers could be handled. The net result of the multiple system is that every wire in the exchange is immediately accessible to every operator.

Now let us see just how the operator handles her subscribers. She has a certain number to attend to, say 60. In front of her, at close range, are 60 special spring-jacks, to which the lines of the 60 subscribers are connected before they go to the spring-jacks in the multiple part of the board, and 60 little metallic shutters by the falling of which a subscriber's call is announced. The operator's telephone set consists of a receiver with a metal clasp to retain it in place at her ear, thus leaving both her hands free, and a skeleton transmitter, which can be raised or lowered by means of the balanced cords from which it hangs. On the narrow counter or shelf is a row of little buttons and another of cam levers, which actuate switches placed beneath the shelf. Behind these are rows of plugs attached to long conducting-cords, the plugs being kept in upright position when not in use by counterweights slung on the cords. When a subscriber calls up, the operator, by depressing one of the cam levers, switches her telephone set in connection with one of the pairs of cords and plugs; pushing one of the plugs into the subscriber's spring-jack, she inquires, politely, "What number?" The curt query does not look exactly polite when written down, but the operator, who is on the average a most willing and obliging young woman, contrives to infuse politeness into it by tone and inflection; she lingers slightly on the "num" and puts a cheerful chirpy rising inflection into her "ber," and the result is generally quite pleasing.

Having got the number, she then picks up the other plug, and touches with it the socket of the multiple spring-jack bearing the number called for; if she gets a click in her head telephone, she knows that the line is engaged, and she promptly informs the first subscriber that the number he wants is "busy." Of course he does not believe her, and leaves his instrument with the moral conviction that the man he wants to talk to is dying to talk with him, and waiting by the telephone in momentary expectation of his signal. But the multiple board tells no lies, or only very rarely does it do so; as, for instance, when some part of its delicate organism is out of order; and under those circumstances even human beings are apt to behave strangely, so why should a machine do otherwise? One of the beautiful features of the multiple board is that when once a line is in use for conversation, the fact that it is engaged is proclaimed to every operator who attempts to approach it. This is very necessary, because in a large switchboard a line is accessible at twenty or thirty different points, according to the number of sections; and if no indication were given when the line was in use, it would frequently happen that half a dozen or more subscribers would be connected together. But by an ingenious contrivance such mischances as this are prevented. Whenever a connection is put up, the wires running through the switchboard from each of the spring-jacks occupied are automatically charged with a current, so that whenever the corresponding spring-jack in one of the other sections of the board is tapped by an operator with one of her plugs, a distinct click is sounded by the action of the current in her head telephone, and she knows that the line wanted is "busy."

If on tapping the socket of the spring-jack with her plug the operator gets no click, that is a sign that the line is clear, and she then pushes the plug home, and presses one of the buttons in the first row to ring up the subscriber; the two subscribers are then connected together, and the operator throws up the cam lever which keeps her telephone set in connection with that particular pair of cords and plugs, and is ready to answer the next call, of which perhaps several have come in while she has been carrying out the operations described. Although the description has been long, the work is done very quickly, and the time occupied in making a connection does not average more than a few seconds. The exception is when the two subscribers to be connected are situated in parts of the city far distant from each other, or when a suburban or long-distance connection is required. The lines then have to be connected through several exchanges by means of trunk wires.

The trunk service between the different exchanges has been very thoroughly worked out, so that connections may be put through with the minimum amount of delay. All the exchanges are connected directly together by underground cables which are used exclusively for trunk wires. The trunk wires between the exchanges are divided into sending and receiving circuits, each circuit being used only for connections in one direction. The receiving trunks at the exchange terminate not in spring-jacks, but in cords and plugs. These cords and plugs are in front of a section of the multiple board known as the "trunking section," and all the connections are made by boys, who receive their orders directly from the operators at the other exchanges. Each boy has a head telephone to which a pair of wires runs from the distant exchange, the circuit being there connected to contacts accessible to every operator. This arrangement is termed a "calling circuit." The operator who needs a trunk connection at another exchange plugs on to the calling circuit, and speaks her orders directly into the boy's ear. She calls for "1650 Spring, on trunk 305,' and the boy picks up the plug corresponding to trunk 305, and plugs it into the spring-jack number 1650 in the section of the multiple board in front of him. The sending-trunks at each exchange, which of course become the receiving-trunks in the other exchange where they terminate, are distributed among the different sections of the board, so that each operator may have trunk wires available for connecting her subscribers through to those of other exchanges. This systematic arrangement of trunk wires, a sort of double-track system with special circuits by which to order up connections, is a highly important part of the system, as a large proportion of the traffic is between subscribers belonging to different exchanges.

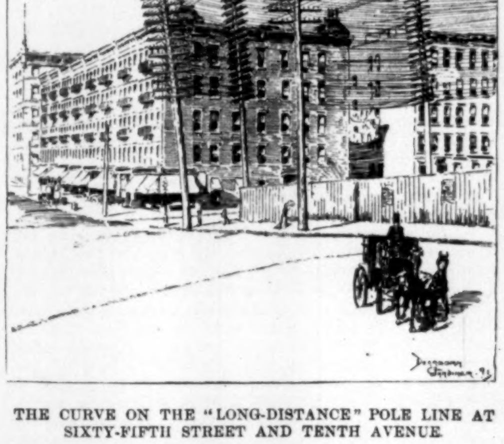
The appearance of a telephone switchboard from the front is that of an orderly and methodical arrangement of push buttons, cam levers, plugs—all held upright in their places by the weighted cords to which they are attached—and annunciator shutters, the whole surmounted by the serried batteries of spring-jacks, which occupy the upper portion of the board above the shelf. At the rear of the board is the mass of cables which contains the wires that connect the subscribers' lines to the different spring-jacks, a host of other wires and connections appertaining to the various cords and plugs, and the accessory apparatus belonging to different parts of the system. One or two switchboard wiremen are generally occupied behind the board making connections, and searching out the small defects which from time to time are bound to crop out in such a complicated collection of mechanical and electrical devices. There is plenty of material for them to overlook and keep in order, innumerable points where the slightest disarrangement may cause trouble, and only ceaseless vigilance can secure immunity from interruption and delay. Such a switchboard as that at the Cortlandt Street exchange contains several thousands of miles of wire, all of which is in comparatively short pieces; every piece must be perfect, well insulated from all its neighbors, and connected at certain points and at no others. There are over 260,000 spring-jacks in the switchboard, each spring-jack having three little springs to which wires are connected and soldered; in this work alone there are 780,000 soldered connections, and a large number of others occur in the different parts of the switchboard circuits. In an electric circuit every connection is a spot vulnerable to "trouble," so it is easy to see that it is no small job to keep a telephone switchboard free from trouble.

To return for a moment to the operators, it should be pointed out that they do not carry on their work entirely without supervision, as might be imagined from the fact that their conversations with subscribers are conducted in such a way that amidst the general buzz in the exchange no part of it can be heard more than a foot or two away, and even then it is only one side of the conversation, as the other is spoken directly into the operator's ear.

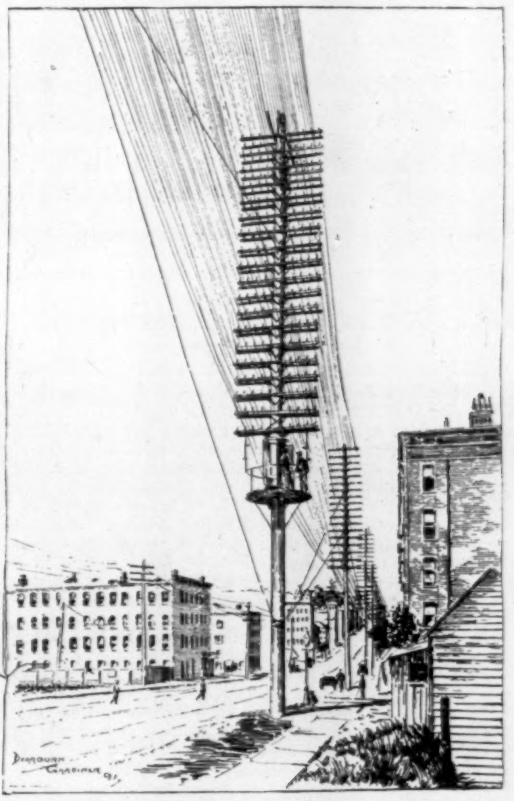
The manager of the exchange of course patrols the room from time to time to see that all is going on well, and that the service is not suffering in any way; but as all the work is carried on by telephone, it must also be overlooked, or rather overheard, by telephone. In each exchange there is a desk known as the "monitor's desk." This desk is provided with circuits which run to the telephone sets of every operator. The assistant manager, who occupies this desk, by pressing a switch can connect her telephone with that of any one of the operators at the switchboard, and thus hear all that she is saying and doing, and all that is being said to her. If anything is wrong, the monitor makes note of it, and if she can give any advice or assistance to the operator, she gives it. If any part of the switchboard apparatus is out of order, or there is any trouble outside the operator's control, she passes on word to the proper quarter. The subscriber who is wont to abuse "Central" when he does not get exactly what he wants in ten seconds should remember that another ear besides hers may be listening to his objurgations.

For his illustrations of the operating department of the telephone system Mr. Gardiner has taken a portion of one wing of the switchboard at Cortlandt Street (the entire board is 263 feet long, in the shape of the letter U, and occupies the whole of the upper story of the telephone building), showing the operators at work, a view of the back of the switchboard, showing the switchboard wiremen at work making a connection to one of the middle rows of spring-jacks, and the monitor's desk at the Spring Street exchange.

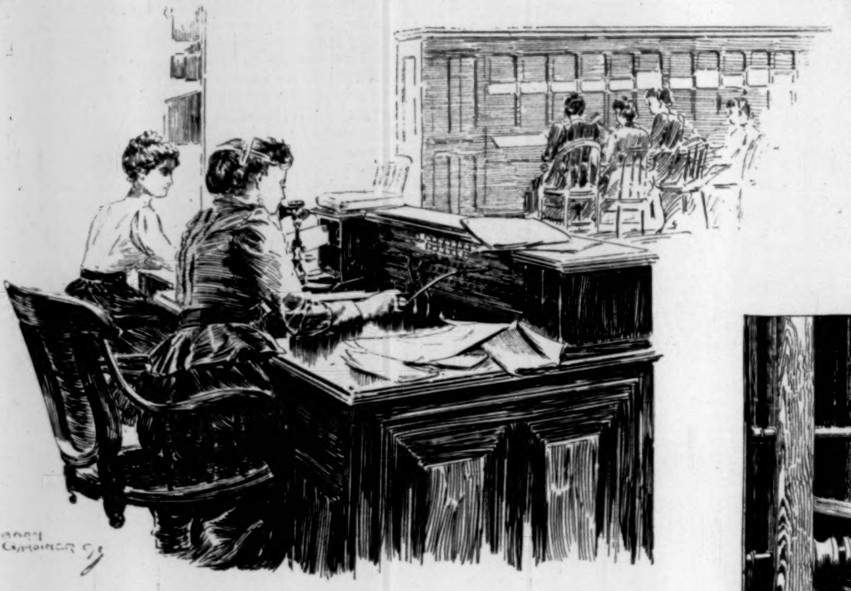
A review of the telephone service as it is carried on to-day would be incomplete without some mention of the careful organization which is required in order to maintain such an extensive system, containing so many subdivisions, both of machinery and of work, in a high state of efficiency. Probably in no other industry does so much depend on organization and systematic carrying out of orders and keeping of records which check and countercheck one another as in the maintenance of a large telephone system. The high executive organization is, of course, the same as in all large corporations: a board of directors, a president, an executive committee, and a general manager, to whom all questions of moment are referred for decision. From the general manager's office the practical work of looking after the system begins. Immediately under him are the electrician, who makes out plans and specifications, and advises as to all work of a technical character, makes tests, and reports on cables and other electrical material, and so on; and the general superintendent, who is generally responsible for the operation and maintenance of the entire plant of the company and for all the new work done. This work the general superintendent divides up among several other officials—the super-



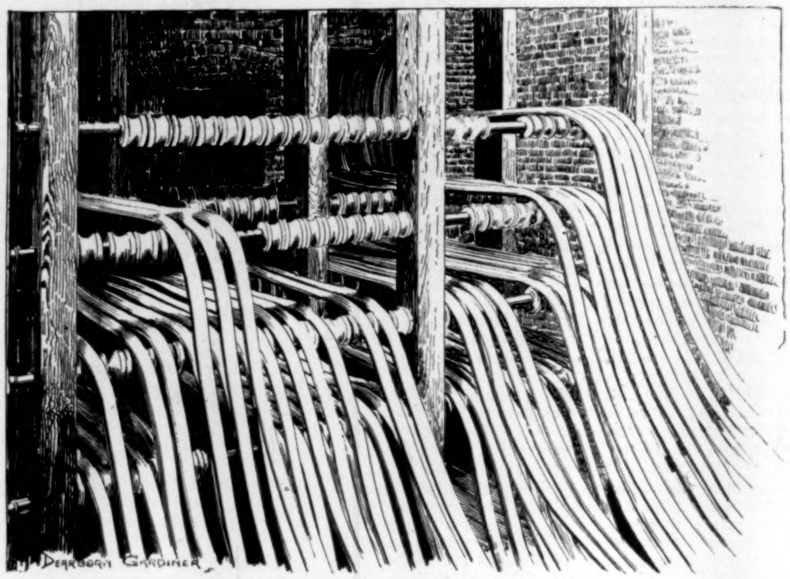
THE CURVE ON THE "LONG-DISTANCE" POLE LINE AT SIXTY-FIFTH STREET AND TENTH AVENUE.



THE CABLE TOWER AT ONE-HUNDRED-AND-TWENTY-FOURTH STREET AND TENTH AVENUE—JUNCTION OF THE OVERHEAD AND UNDERGROUND WIRES.



MONITOR'S DESK IN THE EXCHANGE.

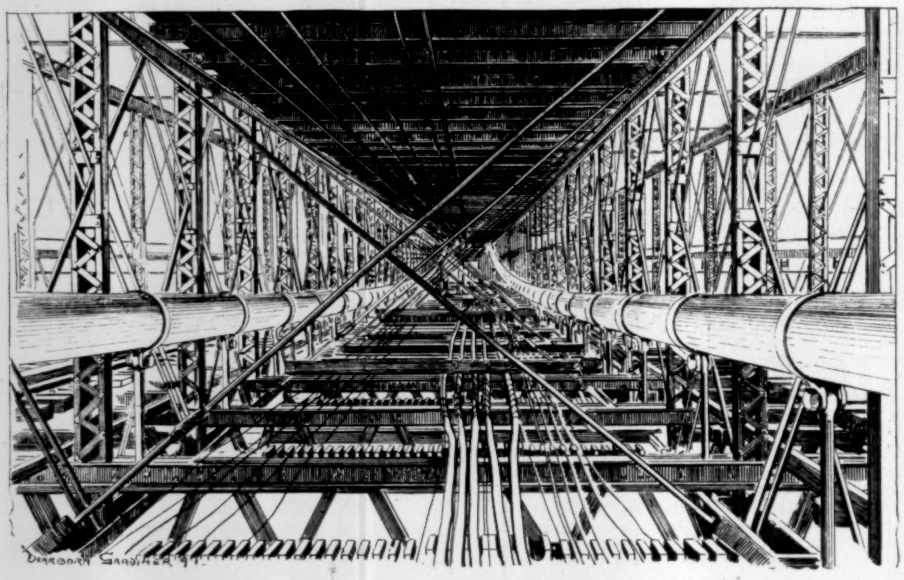


UNDERGROUND CABLE RUN LEADING FROM SUBWAYS INTO THE VAULT AT THE SPRING STREET EXCHANGE.

intendent of exchanges, the superintendent of construction, and the superintendent of equipment. The superintendent of exchanges has charge of the operating departments of all the exchanges; at each exchange there is an office manager—who is in general charge of the office—a chief operator, a monitor, and a detailed inspector to look after small troubles in the switchboard, besides the regular force of operators. The superintendent of construction attends to the building of new lines, erection of house-top fixtures, repairs to leased roofs, and all out-door construction work. The superintendent of equipment has charge of the electrical equipment of all lines and of the exchanges, and is directly responsible for the efficient working of the whole of the electrical plant of the system, from the subscribers' stations to the switchboards in the central offices.

This responsibility, dealing as it does with some nine thousand and odd lines and instruments, with all their central-office connections, is no light one, and to shoulder it properly needs careful sub-organization of the working staff. This staff is divided into two forces, one of which, headed by the chief wireman, attends to matters of equipment; the other, under the chief inspector, to matters of maintenance. The equipment staff attends to the work of equipping a subscriber's station, and connecting up the instrument to the line built for it from the nearest underground cable, the operation being completed at the exchange by connecting the proper conductors in the underground cable to the switchboard wires which correspond to the number assigned to the subscriber; the same staff looks after all removals of instruments when a subscriber changes his office or residence, and all such work as inside wiring, switchboard alterations and repairs, and underground cable connections. All of this work is done on written orders from the general superintendent, and accurate records are kept of all the orders as they pass through the equipment office, how the work is done, by whom, the material used, and so on. A large force is constantly employed in equipping new lines, as many subscribers are added to the system every day.

The maintenance division of the staff of the superintendent of equipment is entirely occupied with the inspection and overhauling of subscribers' instruments, and the inspection and repair of the lines. A large number of general inspectors make daily rounds among the subscribers, the work being so laid out that every instrument in the city is thoroughly examined at stated intervals, more than a month never being allowed to elapse between two consecutive inspections. The inspector goes over the instrument carefully, examining and trying all its parts, correcting any slight defects, and making note of any which need substantial repair or renewal of parts. The details of each inspection are entered on a slip which the subscriber signs and endorses with any complaint or remarks he may have to offer. These slips are handed in by the inspectors when they return to headquarters, where they are recorded in brief in special account-books, which thus contain a history, kept well up to date, of the condition of every instrument in the city. The inspectors are each provided with a complete kit of instruments and materials for adjusting and cleaning the telephones and replenishing the batteries, and with a supply of the small parts which a subscriber's set contains, so that they can renew anything which has become corroded or damaged sufficiently to impair the efficiency of the service; they are thoroughly instructed in the technical details of their work by one of the assistants of the electrician's staff, who treats them to weekly lectures on the telephone and its peculiarities, illustrating with diagrams all the numerous points about which they require to exercise special care.



TELEPHONE CABLES ACROSS THE BROOKLYN BRIDGE.

In order to keep a proper supervision of the working condition of the lines themselves, a wire chief is stationed at every exchange. He has a special desk called the "trouble desk," provided with circuits and testing instruments, by means of which he can ascertain the nature of the "trouble" on any line reported to be in defective condition. In his charge he has a number of "trouble-men," whom he sends out to repair the faulty lines, and they report back to him as soon as they have found the trouble and removed it.

All of this work of making additions and changes to the electrical plant and its maintenance in proper working order is under the responsibility of one office, and all reports referring to such work are filed and recorded in that office. Each exchange also has its separate records of that portion of the work done from that exchange. By this system it is an easy matter to trace out the smallest detail about which information may be required at any moment. The time that any subscriber's line has been out of service can be told to the day, hour, and minute, together with the nature of the trouble, the name of the man who removed it, the quantity of material he used, and the time he occupied in the operation. The exact course of every subscriber's line, from the instrument on the wall to the spring-jack in the switchboard, is on record; the number of inspections made of his station, and its condition at the time of inspection; the complaints he has made, and how they have been attended to—in short, any possible information on any detail of the plant and service can be supplied, with chapter and verse, from the files and records, when required for investigation by one of the officers of the company. It is only by such systematic organization as this that the complex machinery of an extensive telephone system in such a city as New York can be maintained in a high state of efficiency.

LELAND STANFORD, JUN., UNIVERSITY.

BY WESTON COYNEY.

LAST June there was a pilgrimage of the learned to the Leland Stanford, Jun., University, situate at Palo Alto, some thirty miles from San Francisco, and the pilgrims to its dedication included representatives of colleges and universities, public educators, and leading men of thought and culture. The university will be opened this autumn with imposing ceremonies, and the first students will soon be matriculated.

The Stanford University is likely to become one of the most famous educational institutions of the age. It is not patterned after any university in this country or abroad, and while the plan upon which it is to be conducted is in a great measure original, the magnitude of the undertaking will give a scope to its operations far wider than any educational institution of to-day possesses. In the first place, it will start with a handsome endowment. In 1885, when Senator Stanford and his wife decided to erect such an institution as a memorial to their only son, who died in that year, they executed a deed of trust, giving property worth $5,000,000 as an endowment. In addition to this, they agreed to erect all the necessary buildings, and to add to the endowment fund if more money were found necessary. The plans for the institution have since grown in the mind of the worthy Senator, many additions and improvements have been added to them, and it is an open secret that the donors will now make the endowment $20,000,000.

This, of course, at once places the university at the head of all our colleges, so far as the matter of endowment is concerned. Harvard's available funds amount only to $4,500,000, Columbia's to $4,000,000, while Cornell until recently was debarred from accepting anything in excess of $3,000,000.

The idea of the founders is to provide for the practical training of the children of California in the trades, sciences, and arts. The Senator is, above all, a utilitarian; he is a great believer in the importance of practical education, and he thinks, with good reason, that the field is too wide for the student of general training to get any foothold unless he have the means for two or three years of practical study after his college course. To remedy this defect, he proposes to establish schools of agriculture, machine shops, and laboratories for the study of applied science. But at the same time no check will be placed upon the acquirement of the broadest culture by those who have the means and the leisure. There will be provided as great facilities for the pursuit of merely classical studies as for any other. All the best energies of the management, however, are to be directed toward the practical training of those who have to make their way in the world.

To carry out such a plan in its entirety will of course necessitate a large number of buildings. In addition to class and lecture rooms, there are many trades for which special workshops, fitted with the latest improvements in the mechanical arts, will be essential, and these, of course, will cover much ground and cost a large sum. The architect's plan giving a bird's-eye view of the university shows at a glance that every facility and convenience necessary to such an institution has been thought out upon the most generous scale.

Taking this plan in hand we board a train on the Southern Pacific road for a thirty-three-mile ride to Menlo Park—a suburban retreat for the wealthy something like Llewellyn Park, at Orange, New Jersey—a pretty station bordering on the confines of the famous Palo Alto ranch. If you can keep your mind from being too much engrossed with the pretty white villages dotting the vineyards and fruit farms, all smilingly green in the dazzling white sunshine of this glorious climate, and can at the same time listen to the explanation of the plan being given by Mr. Charles D. Austin, the resident architect, as we bowl through this pretty scenery, you will be able to gain some idea, probably only a faint one, of the immensity of the undertaking.

This general plan is of three large quadrangles, arranged on the longer axis, and running east and west. The central quadrangle, as you will notice, is surrounded by an inner series of buildings and an outer. This outer series will form a façade of 1000 feet in length, and the centre of this façade is occupied by an arch rising 87 feet, of which the piercing is 47 feet. This is to be a memorial arch, probably to Senator Stanford himself, and is to have as a frieze a bass-relief running all round, and illustrative of the progress of civilization from the Stone Age to the present. Directly south of this is the octagonal tower of the chapel to be dedicated to the memory of young Stanford, which is to be rich in stained glass and artistic treasures from all over the world. Beyond the chapel you see the high smoke-stack and the

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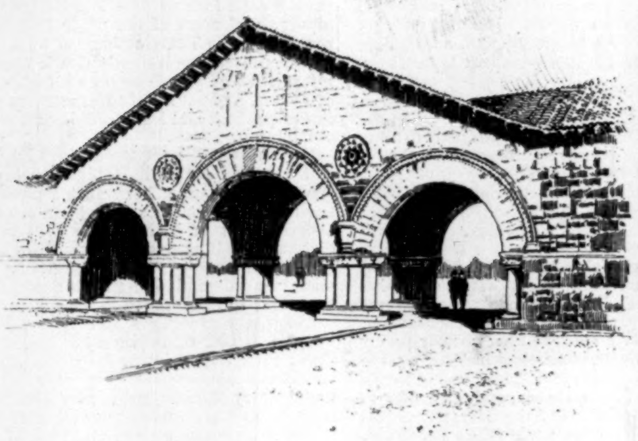

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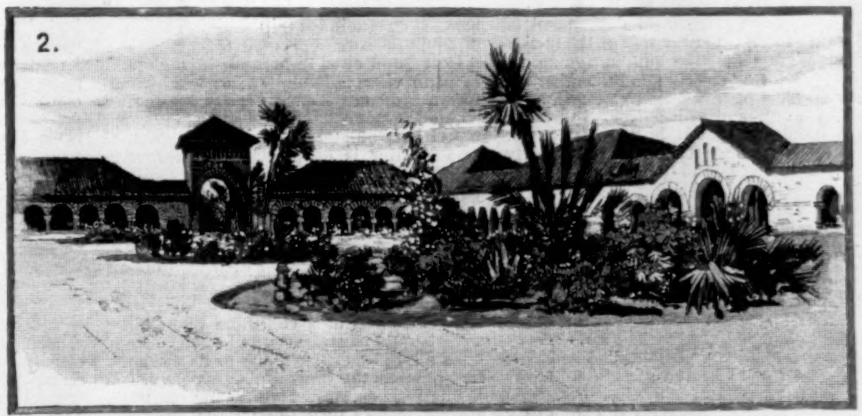

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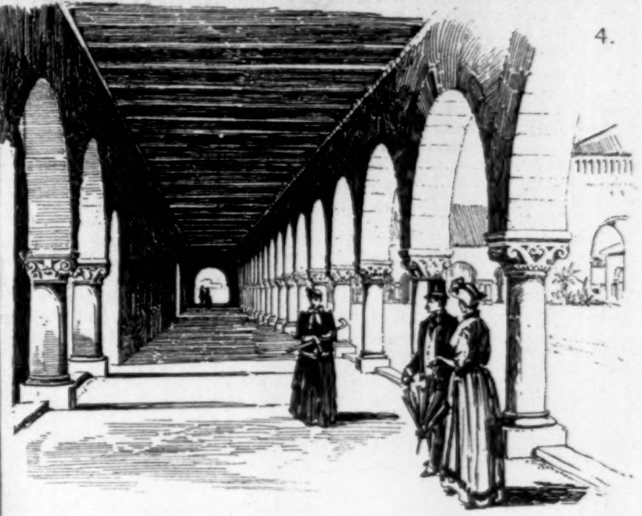

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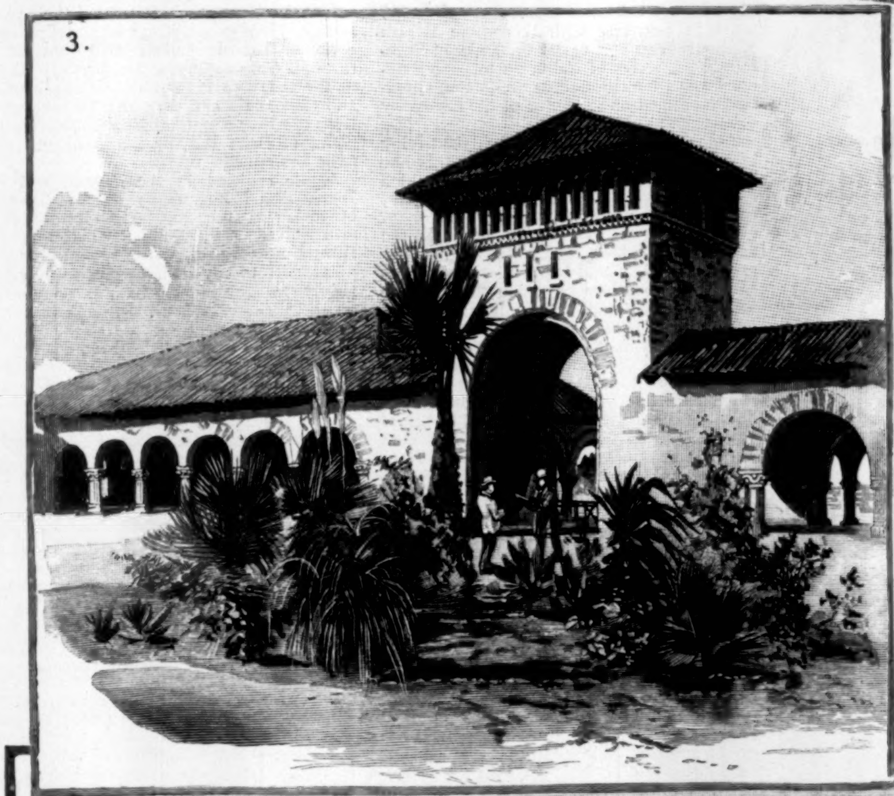

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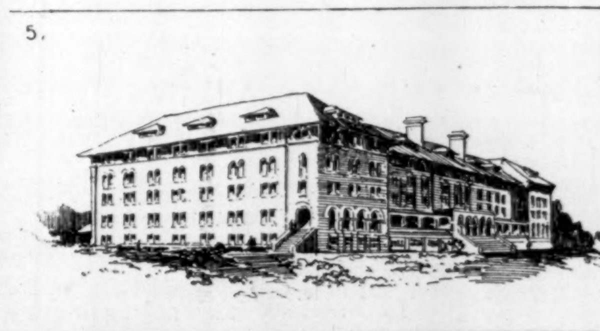

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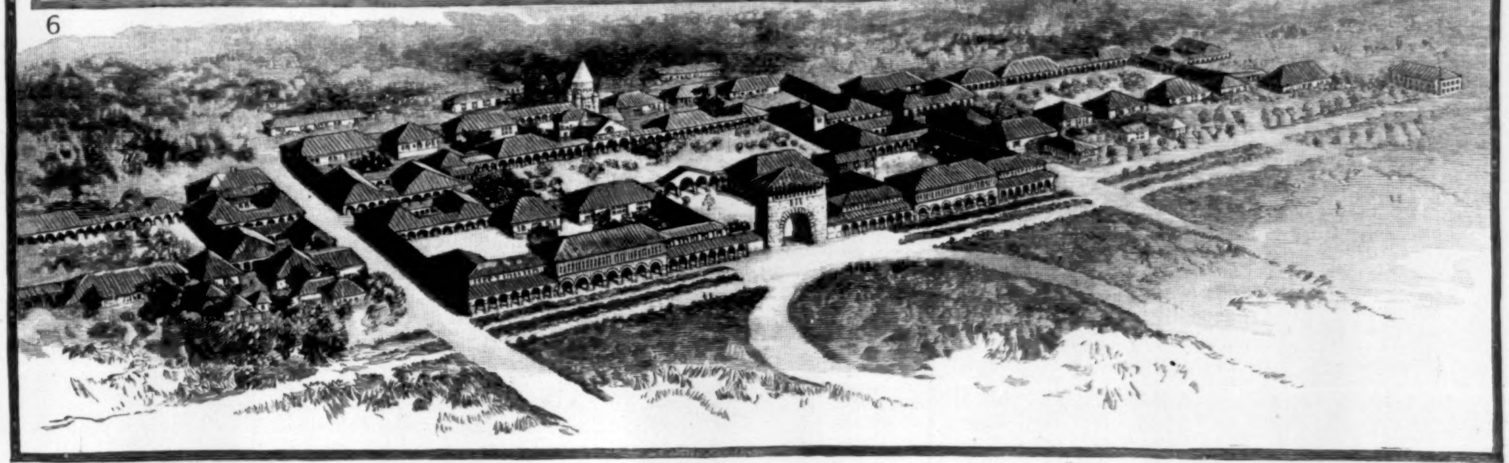

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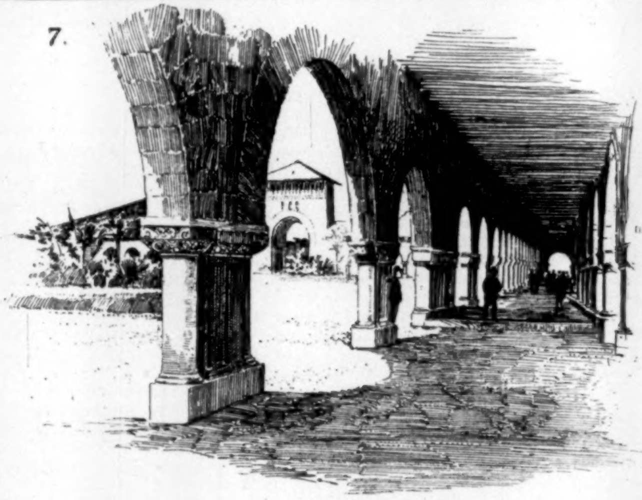

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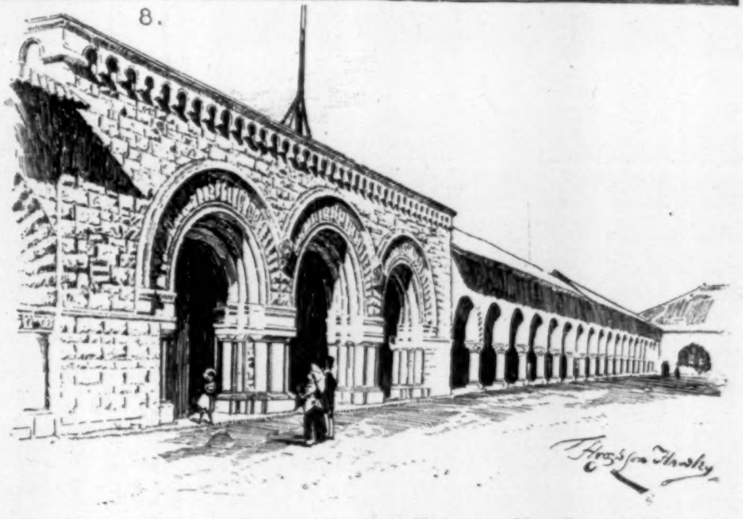


THE LELAND STANFORD, JUN., UNIVERSITY, AT PALO ALTO, CALIFORNIA.—Drawn by Hughson Hawley.—[See Page 732.]

1. North Entrance to Quadrangle, from inside. 2. Main Quadrangle, looking North and West. 3. Northwest Tower and Arcade. 4. West Arcade. 5. Boys' Dormitory. 6. General View of the University, when completed. 7. East Arcade. 8. Memorial Chapel.

buildings of the mechanical department of the institution. On either side of the memorial arch are two large buildings—one designed for the art museum, and the other the library. This plan has been changed, however, as Mrs. Stanford has decided to make the museum a special gift from herself, and has chosen as its site a spot nearly half a mile away. This building is to be constructed of cut stone, and in imitation of the museum at Athens, the plans and drawings of which have been furnished by the government of Greece. The young Leland was, for his age, a great collector; and in the Stanford mansion in San Francisco is one of the largest and rarest collections of artistic and historical relics to be found in this country, all catalogued and packed away ready for removal to this new building. The building which was to be the art museum will now be the museum of natural history.

The two other quadrangles run from east to west from this central one, and are made up of class and lecture rooms. At each end, standing slightly apart, are two large dormitories, each capable of accommodating eight students—the one for the boys on the east, and that for the girls on the west. These are one-third of a mile from the central arch, making the front very nearly an unbroken line of masonry of three-quarters of a mile in length. This in itself will help you to an idea of the size of the institution.

Then, dotted here and there, are the professors' residences; and it is intended to add cottages, where at small cost families may live while their children are under tuition here. All this in the midst of the most beautiful landscape-gardening that the mind of the gifted Frederick Law Olmstead can conceive, who will have at his disposal a botanical collection far surpassing anything in this country.

So much for the general plan, and for our railroad ride to Menlo Park. In a few minutes we are bowling along the country road beyond the embowered residences and the terraced evergreen lawns.

"There is Palo Alto," says my guide. "You see that tall tree just on the horizon line? There were two of them, but one fell only last year. That marks the corner of the Palo Alto ranch, and from them it obtained its name. From those immense trees, which could be seen for a distance of forty miles, the Spaniard called all this, 'Las Sierras de los Palos Altos.'"

We are going up the famous Santa Clara Valley, through orchards and vineyards, the Coast Range of mountains on the one hand, and the Santa Cruz and Gabilan mountains on the other. The day is so bright that you can catch a glimpse of the gleaming dome of Lick Observatory, on the highest peak of the Gabilan range. We look over miles of broad avenues, lined with Australian gum-trees, cedar, spruce, and, here and there, a tall redwood-tree. Peeping out from a mass of thick foliage there is Governor Stanford's residence, a baronial home worthy of the cultivated estate of 8000 acres, famous throughout the world as the breeding-place of great trotters. After a time there are few trees, and miles of white board fences, and a race-track, and groups of the horses which have made or are to make their fame. To the right we see a large low building with a red tile roof, which even in the distance reminds you of the great mission buildings of southern California.

This is the site of the university which is to be more famous than the Palo Alto ranch in which it is situated. Of the innumerable buildings in the general plan there were few near completion at the time of my visit. There is the boys' dormitory, the central quadrangle, and the machine shops with their big smoke-stack. The dormitory is four stories high, of pale yellow sandstone, and measuring 312×45 feet. Its cost will be something like a quarter of a million, its tiled roof alone costing $40,000. To the west of this is the central quadrangle, only the inner portion of which is in course of construction and completed so far as the building is concerned. From this you are able to gain a fair idea of the architecture.

Although it strikes you with memories of the mission buildings it is in design entirely original, but the feeling is Spanish. The architects, Messrs. Shepley, Rutan, & Coolidge, of Boston, have been singularly successful in suggesting the first architecture of this country, without slavishly copying from it. Even in the light warm San José sandstone, however, the exterior looks heavy and squat; but this, it must be remembered, is to be almost surrounded by an outer circle of buildings one story higher. But from within this effect is lost, and the eye never tires of the long rows of pillars with their foliated capitals, the perfect harmony of the arches, and the chaste beauty of the ornamental work.

This great court is 700 feet square, the centre being of asphalt, and the corridors of concrete in two colors. In the asphalt eight large circular beds are cut, in which the fountains are already playing upon tropical verdure and plants in bloom. The quadrangle is 586×246 feet. There are five college buildings on each of the sides, and two on each of the ends, making fourteen in all. The walls are very thick, and the windows are 18 feet high, with double transoms. The roof is of corrugated red Spanish tiles, an exact counterpart of the old roofs which may yet be seen in the ruined adobe buildings of Santa Barbara or Monterey.

Half a mile or so from the quadrangle, and in plain view, is the gleaming white Stanford mausoleum, the most costly building of its kind in this country probably. It is of a severe Grecian style, of pure white granite. The interior is of polished white marble with a frescoed ceiling. Over the tomb of young Leland, the only one buried here, is a design of two angels bearing him upward in their arms. This tomb alone cost $50,000. The three sarcophagi are of Carrara marble, and the upper slab of each weighs half a ton.

The grounds about the new buildings are now, of course, in a confusion of building material and excavations, and one can form but a faint idea of the beauty of its academic groves when the general plan is completed. White pigeons are cooing on the red roofs already, just as they did on the buildings erected by Father Janero hundreds of years ago, and in a little while they will be wheeling about the grandest mission buildings, with the grandest mission for their object, that this country, and perhaps the world, has ever seen.

BEDTIME TALES.

It used to be, long time ago,
  In days of boyhood sweet,
When you were my big brother Joe
  And I was little Pete,
That when you took me up the stair
  And stowed me into bed,
I turned, when I had "said my prayer,"
  And "Tell a 'tory," said.

And you, old boy, what wondrous things
  You told, of talking bears,
And ponies that flew by on wings,
  And djinns with golden wares,
And princesses in silken gowns,
  And Robin Hood's bold scamps,
And poor young men who built great towns
  By rubbing magic lamps!

And soon that darkened room of ours
  Became a fairy hall,
And everywhere were gorgeous flowers,
  And diamonds over all,
And glittering lights from stone to stone
  E'er seemed to dart and leap,
And strains of music floated on,
  And then—I was asleep.

Ah, dear old boy, I cannot hear
  Those tales you told again,
That time is past now many a year,
  And both of us are men;
But memory comes and dwells with me,
  And visions rise to view,
And there are times I think I see
  Those fairy scenes with you.

For there is one, a little tyke,
  Who, when the night is new,
Commands that fairy army like
  His papa used to do;
And there beside his crib I greet
  Those scenes of long ago,
When I, you know, was little Pete
  And you were brother Joe.

Carl Smith.

THE MITYLENE SCARE, AND THE RUSSIAN VOLUNTEER FLEET.

A REVIEW OF THE SITUATION.

BY CAPTAIN F. S. DUGMORE,

Sixty-fourth Regiment B. A., Honorary Lieut. R. N. Reserve.

An extraordinary amount of feverish excitement has recently been aroused by a very simple matter of common recurrence—the anchoring of a British ironclad in Sigri, a harbor of Mitylene, and the landing of a handful of her blue-jackets, whether for recreation or for drill does not very clearly appear, and matters not at all.

This trivial incident has been exaggerated and distorted into a British seizure of a Turkish island, and the *canard* thus absurdly started has lost no time in traversing, telegraphically, the entire globe.

The very simplicity of the affair, coupled with the hasty diplomatic action taken thereon, would almost suggest a suspicion that it is desired in certain circles to ascertain how such a proceeding as was reported would be viewed by the world at large; or that the Porte—which, with existing facilities for telegraphic communication, cannot *really* have been in the state of utter ignorance affected—was anxious to know precisely the amount of support to be reckoned on from other powers, especially France and Russia, should England—sick of everlasting Turkish evasion and nonfulfilment of treaties—ever boldly decide upon a statesmanlike and, under the circumstances, justifiable *coup* of this nature.

These considerations, indicating at least a possibility of further developments, may make a review of the situation and a description of localities to which all eyes have been so suddenly turned matters of some interest in view of the possible future. It is perfectly clear that the occupation of the island had suggested itself to many minds, including those of the Sultan's advisers, as a correct and judicious move in furtherance of British policy; and it is on the cards that some fine day English statesmen may overcome their proverbial tardiness and timid pusillanimity so far as to adopt and act upon the views taken by politicians more wide-awake or more daring than themselves.

In itself there was nothing more sensational in the actual occurrence than in the recently chronicled (and illustrated) drilling of American seamen and marines on the little Greek islet of Vido in the harbor of Corfu. Almost from time immemorial British blue-jackets have been in the habit of landing for drill in various parts of Turkey.

That this habitual practice should have attracted so much attention at the present moment proves the dangerous state of tension created mainly by persistence, which in these days is simply an outrageous anachronism, in the stupidly short-sighted British policy of former times, consisting in keeping the Dardanelles closed, and thus denying to the whole of southern Russia, and in winter to the entire dominions of the Czar, any access whatever to the ocean and to the outer world. In 1886 I was present in this same harbor of Sigri in my schooner-yacht *Australia* (215 tons), in company with the whole British Mediterranean fleet under the Duke of Edinburgh. A series of elaborate torpedo exercises was gone through, as well as an experimental attack and defence of the harbor by submarine mining.

Among a number of sketches now lying before me, which I took on the spot, is one I sent to England at the time, and which duly appeared in the London *Graphic*, showing the position in Sigri Harbor of every vessel of the British fleet on the 20th of September, 1886, with, in the foreground, the flags and buoys marking the location of the mines by which the entrance was defended; and I have before me another sketch, taken on the 9th of the same month, of a torpedo-boat attack on H.M.S. *Téméraire* in the harbor of Marmorice, on the coast of Asia Minor opposite Rhodes, for the last hundred years a favorite British naval station. On the opposite heights of Rhodes I have seen still standing, though much dilapidated, the cottage, in full sight of Marmorice entrance, occupied as headquarters by the British Admiral Sir Sydney Smith during the old-time struggle for supremacy in Syria and Egypt.

It may, perhaps, not be generally known that by the convention under which England occupies Cyprus—for which island she pays a yearly rent to Turkey—she guarantees and assumes the responsibility of a quasi-protectorate over the entire dominions of the Porte in Asia Minor, including, presumably, Mitylene and Tenedos, and that under that convention she would have an undoubted right to land troops in the guaranteed districts at any moment when their safety or integrity might seem to be imperilled. It is needless to say that the Turkish part of the bargain, the solemnly guaranteed introduction of thorough reforms and of a decent system of government, has never been fulfilled, and that Great Britain has, by not *enforcing* its fulfilment, as she has the treaty right and the power to do, so completely broken faith with the other great powers as to afford to Russia the most ample moral justification for the "tearing up" of any inconvenient treaties.

Russia undertook the task, for which she was fully competent, of enforcing on Turkey a system of indispensable reforms and of equal administration of justice, admitted by all Europe to be imperative, simply because their non-execution constituted a danger to the world.

England procured the withdrawal of Russia from the task *on the distinct understanding* in the face of all Europe that *she* would herself undertake the enforcement of the desired changes.

By resting satisfied with paper promises from Turkey, and paper protests against their nonfulfilment, she has violated her understanding with Europe; and, so far as the question of right and wrong has any weight, has untied the hands of Russia and left her morally free to resume her task—her mission—at the first convenient moment.

The position of England, so long as she holds her hand, is distinctly analogous to that of a citizen who will not let any one else extinguish a fire in a neighbor's house, on the plea that he can and will himself undertake to quench the flames; but who, instead of so doing, stands by with folded hands, *talking* a great deal, it is true, but *doing* nothing, while the conflagration increases and threatens the whole town. Instead of amendment, nothing has taken place but deterioration. Asia Minor is gradually relapsing into barbarism, anarchy, and brigandage. The only active functions of local provincial government consist in extorting as much revenue as possible, to be squandered at Constantinople in providing diamonds for the Sultan's harem and luxuries for court favorites, no serious attempt whatever being made to perform the governmental duties of affording security to life and property, or preserving the public forests—the destruction of which ruined Cyprus long since, and is rapidly ruining Rhodes. I have cruised along hundreds of miles of coast on which no presumably well-to-do European could disembark and proceed half a dozen miles inland without the certainty of being kidnapped and held for ransom—a practice prevailing up to the very suburbs of the important and half-European city of Smyrna. From my yacht's deck in Smyrna Harbor I have seen hundreds of acres of the noble forests surrounding Lake Tantalus blazing to destruction, because some beggarly Greek wanted a pinch or so of potash to cure a few pounds of raisins, and set a light to the nearest tree as the quickest and least troublesome way of obtaining it.

For the prevailing state of things England, and England alone, is, I blush to say, responsible; as is also her selfish jealousy for the retention of Morocco—which, since her abandonment of Tangier, she will neither civilize herself nor permit France or Spain to take in hand—in a condition of abject misery and degradation that is a scandal to the world and a disgrace to the century.

Liberals, excepting a few men like Sir Charles Dilke, think little and care less about foreign politics or imperial interests and honor abroad; but perhaps some day the country squires, as honest and high-minded as they are (generally) hopelessly stupid, who constitute the backbone of English Conservatism, may be able to spare sufficient time from their foxes and their pheasants to learn geography, and thereby to understand that the road to India does *not* lie through Constantinople, but through Egypt on the one side and Central Asia on the other; and that India can no more be threatened from the Bosporus than New York from the Strait of Belle Isle, or the Panama Canal (when completed).

While cruising in the Ægean and the Black Sea I had many opportunities of observing all the fine vessels of the Russian Volunteer Fleet, about which so much fuss is now being made; though for five years past, to my own certain knowledge, they have been passing backwards and forwards through the Dardanelles whenever so disposed. I saw the same ships, built by subscribers to the Patriotic Fund, for the same (warlike) purpose as the subsidized and convertible cruisers of the Cunard and other royal mail steamship lines, acting temporarily as peaceable merchantmen at Odessa; and, again, taking their place in the Defence Squadron in repelling a sham attack by a torpedo flotilla in the harbor of Sevastopol. Those I saw in the Bosporus in 1886 carried, as every one knew, a full armament of heavy guns stowed out of sight below. It is hard to see what special importance attaches to temporary variations in their *personnel*. They always, like most British mail steamers, carried Reservist seamen, who would have become active combatants and worked the guns in case war had caught them outside the Dardanelles: probably far more efficient sea-fighters than the time-expired soldiers about whose transport England, unable to shake off the nightmare of Beaconsfield's histrionic ghost, has, it would seem, just been exciting herself in such childish fashion. Of course everyone knows that the Czar *could* have moved his men from point to point by a much shorter route, and that the occasion is being ingeniously utilized only to establish a precedent; but, as a matter of right, it was for him alone to decide between an overland transit and a sea passage of some six times its length, and it can be no one's affair but his own if he elected to treat his worn-out soldiers to a lengthened spell of healthy sea air.

The whole state of Eastern unsettlement and chaos, the making *permanent*—or at least the indefinite prolongation—of which was epigrammatically miscalled by the greatest charlatan of the century "Peace with Honor," is due to the blindly selfish and stupid reverence paid by *one* power—England—to a traditional policy that has worked untold evil and bloodshed, and the entire *raison d'être* whereof passed away when Egypt became British—so to remain until the Day of Judgment (or the fall of the empire), though, unfortunately, British politicians lack either the pluck or the honesty to say so publicly—and when the Cossack and the Sepoy met face to face upon our Indian frontier.

Men talk of the "restlessness" of Russia. Who is it that makes her "restless"? What great power possessing one vestige of self-respect would *not* be restless, if arbitrarily cooped up and debarred access to the rest of the world excepting through semi-arctic regions, and forbidden by treaties (happily "torn up") even to defend herself along her most vulnerable frontier?

I have talked much in Russia with influential Russians of the highest rank, military and civil. Everywhere it was the same story: "We don't want Constantinople; but we do want free access to the world; and we don't wish to see Constantinople fall into the hands of some power that would close the straits against us even more tightly than is done by England's deputy jailer, Turkey."

It cannot be denied that Russia is now (as England once was in a lesser degree) the most distinctly and actively civilizing power in the world. Fortunately for the human race, British prejudice, which would fain have impeded her establishment of law and order in the Caucasus, has proved powerless to prevent the complete fulfilment of her beneficent mission in Central Asia, where she has rapidly converted into decent samples of humanity the savage and blood-thirsty tribes that English folly desired to maintain as a sort of bramble-wilderness barrier or

"Tom Tiddler's ground" between two civilized nations.

Backed by railroads and ample lines of supply and of transport, Russia now stands armed on the threshold of India, which nothing but British imbecility in obstinately denying her an outlet in any other direction will ever tempt her to cross; and yet, while she already occupies and can never be ousted from this commanding point of vantage, it is actually still thought worth while to maintain a chronic situation of dangerous turmoil in the east of Europe, lest, forsooth, a few Russian ships emerging from the Dardanelles, and having to pass a dozen points in the Archipelago where the English and Italian navies could bar their further progress with the greatest ease, should threaten India (already at Russia's feet as much as it can ever be) by running the gauntlet of the canal through (*British*) Egypt, thence through the Red Sea and past its key, (*British*) Aden! Or is it, perchance, feared that, slipping past (*British*) Gibraltar, they should reach India (query: under sail? for no coal would be available) by way of the Cape of Good Hope, or maybe Cape Horn?

For a parallel to the situation we must imagine (with some difficulty) Canada an independent nation, having got through the governmental corruption epoch with the loss only of Nova Scotia, and then picture to ourselves Newfoundland coerced by the United States, or perhaps by Chili, into blockading the St. Lawrence.

How long would it be tolerated for Canadian government ships returning from service in the West Indies or in Europe to be debarred from approaching Ottawa, or whatever city may eventually become their capital, any nearer than Vancouver, and having to round the Horn to do that? How long would Austria or Italy submit to be shut into the Mediterranean by a prohibitive agreement between England at Gibraltar and Spain at opposite and far more impregnable Ceuta?

Keeping the Dardanelles closed is assuredly no protection to Constantinople against Russia, which can go there when she pleases without passing them, encountering no resistance except from the comparatively weak forts on the upper Bosporus, easily turned by a landing on the Black Sea coast.

It is curious to observe the difference in the armament and efficiency of these two positions of about equal natural strength; the weaker defence by far being opposed to Russia, and the stronger to western Europe. It should also be noted that it is only in time of peace, when no danger exists, that the closing of the Dardanelles in conformity with treaties is enforced. In time of war England has always been the first to disregard and violate the regulations on this point dictated by herself.

The only wonder is that the Russians keep their temper as they do under such galling and ever-present provocation. And yet I, and hundreds of my fellow-countrymen, can testify by personal experience that there is no country in the world where an Englishman is treated with such unvarying overflowing kindliness and hospitality as in Russia, which he has been taught to regard as a hereditary enemy. As a matter of fact, the two countries are unmistakably designed by Providence for natural allies, especially in Asia, which they jointly dominate; and it will be a sorry thing for humanity if both do not (as Russia, on her part, is ever ready to do) cordially and frankly recognize the position in time, standing shoulder to shoulder, to save the Western world from devastating inundation by the seething yellow flood that will one day erelong burst the straining confines of the Celestial Empire.

One thing is certain: Turkey can no longer be used by England as a submissive puppet. The spread of education has taught even the Turks that it scarcely pays to be utilized as turnkeys on Russia, and yet denied their wages of unlimited protection and impunity in wrong-doing when the time of need comes. And the result is that of all the great powers none has at this present day so little real influence at the Porte as Great Britain. Threats to a Turk are worse than useless; and for some unaccountable reason England has never dared to go further than threats with Turkey, while she has tamely submitted to injuries that any other power would have promptly resented. Nothing weakened British prestige at the Porte more than an episode of about seven years since, almost parallel to the Russian Volunteer Fleet difficulty, but terminating far less creditably to ourselves.

All of a sudden the Sultan, whose well-intentioned ignorance is something phenomenal, took it into his head that British yachts were war ships in disguise. Orders were consequently issued to refuse passage through the Dardanelles to all yachts flying the blue ensign, which in some cases is a Royal Naval Reserve flag, answering precisely to that of the Russian Volunteer Fleet. Instead of insisting on and *enforcing* a feeble protest (which *was* made) to the effect that the Sultan was mistaken, and vindicating the undoubted rights of British subjects carrying this flag *by express warrant from the Admiralty*, the then Lords of the Admiralty actually had the effrontery—and the cowardice—to send round a circular (received by myself amongst others) to yacht-owners, "advising" them on approaching the Dardanelles to hide the flag which it was their proud right to fly, and to fall back on the red ensign of a merchantman! "As otherwise they might be subjected to inconvenience and detention," redress for which it would naturally be expected that their own government would obtain for them. I had the honor of being the first to effect a *reductio ad absurdum* of the whole business.

I approached the Dardanelles forts with no colors flying, carefully watching the guns and the gunners; and at the very last moment, just in time to avoid a shot, ran up a tiny little rag of a red ensign. As soon as I was past the forts I hauled this down, and very soon had my blue ensign flying again, carried it through the Sea of Marmora, and anchored with it still flying under the windows of the Sultan's palace of Dolma-Baghtche. This fairly cornered the Turks. They could not make me haul it down, and they could not order me out again. So there I flew it for weeks under their very noses, even passing and repassing the Bosporus forts into the Black Sea and back without let or hinderance. Prompted by a rascally mongrel Greek-English ship-chandler and spy named W. C. Temple, they then wanted to search my ship for powder; but this was just a little too much for the British consul, who for once stood firm, so they had to leave me unmolested.

The situation is one that cannot last. While England has totally failed to *enforce* stipulations imposed on Turkey by her as mandatory of the other powers and for their satisfaction, Russia has, very properly and spiritedly, carefully choosing a "convenient season," torn up unjust treaties extorted under compulsion. She has recreated a Black Sea fleet; she has refortified Sevastopol, and made a fortress of Batoum; and has created, as I ascertained by personal inspection, an impregnable arsenal at Nicolaieff.

When a suitable moment shall come; when the Irish question shall bring English Parliamentary government to a deadlock; or when a minister shall be in power more addicted, Gladstone fashion, to fine words than, like Lord Salisbury, to deeds, very real if very slow—Russia will inevitably come to an agreement with Turkey, opening the Dardanelles to her, and restricting their passage to the two allied neighbors. If England does not thereupon commit the blatant absurdity of declaring war against Turkey (with Russia behind her) for the high crime and misdemeanor of trusting her nearest neighbor with a latch-key to her back door, it is very certain that no other power will do so. But the British public will undoubtedly demand compensation—a guarantee—and they will get it, or take it.

Egypt will become permanently and avowedly British; possibly a "protectorate," but certainly independent of Turkey; and the possession of Mitylene, and perhaps Tenedos, will place England in a far better position than at present for barricading the Dardanelles in the—most improbable—event of a Russian irruption in time of war.

Treeless Tenedos, with its solitary bleak hill, completely commanding the entrance to the straits, and covering the anchorage of Besika Bay, could easily be rendered quite impregnable; but has practically no harbor, and is destitute of the ample resources which make fertile, lovely Mitylene the undisputed queen of the Ægean.

Two large islands alone have escaped utter devastation under Turkish misrule. One is Mitylene; the other, Samos, more than half a century ago granted autonomy and a practical independence under its own flag, which, if wisely extended to turbulent Crete, would very speedily and satisfactorily settle the burning Cretan question. Samos is now probably the most perfectly governed little state in the world; I certainly have never seen its equal for unmistakable evidences of prosperity and content. It obtained autonomy just in time to save its magnificent forests. It is too late to do this completely for Mitylene, but the natural smiling fertility and teeming olive groves and vineyards of ancient Lesbos in great measure cover the traces of wanton mischief and reckless destruction so painfully apparent on all adjacent islands and coasts. It possesses three of the finest harbors in the world, all defensible, with secure anchorage for fleets of unlimited numerical strength, but would require, if held at all, to be held in force, since an enemy gaining any one harbor might, by a plunging fire from commanding heights (unless they were very strongly fortified), compel the prompt evacuation of the other ports.

The town and light-house of Sigri have been destroyed by earthquake since my visit. The locality is remarkable for an extensive petrified forest, trunks of huge trees turned into agate and chalcedony lying about in all directions, and some few still standing. The partridge-shooting is very fine, and the district produces, amongst other fruit, quantities of a delicious white grape perfectly stoneless. The inhabitants of the entire island, Greeks and Turks alike (mostly living apart in separate villages), would eagerly welcome British or any other decent government.

So long as Uncle Sam delays accepting his manifest destiny, and performing his clear duty to civilization by the annexation of Cuba, it is probably useless to suggest that the presence of the Stars and Stripes in an Ægean isle, appropriated as a coaling station, would be a most welcome re-enforcement to the cause of order in the East. European powers would scarcely invent a Monroe doctrine to exclude him.

There is no doubt that Mitylene *ought* to have been rented from Turkey by England in place of long-since ruined, worn-out, unhealthy, and harborless Cyprus. But the glamour and dazzle of the historical past, of the Cyprus of crusading days, unfortunately impressed the stagy, tinsel-loving nature of Lord Beaconsfield, to the detriment of the more coldly classic Lesbos of the Greek poets.

The continued government by Turkey of the outlying islands, all in a chronic state of most justifiable disaffection, is an utter impossibility, even if they added to instead of seriously detracting from the strength or stability of the empire.

Whenever the crash—or peaceable understanding—shall come, the susceptibilities of France will probably be saved by the appropriation of Rhodes, and with them the destinies of a once lovely island, whose forests are fast disappearing, to the great detriment of her climate and salubrity.

Five years ago I found the Rhodians confidently and eagerly looking forward to a future under the tricolor of France, and in no negotiations for property transfers was the hoped-for contingency left out of sight or out of the calculation. The imposing traditions of Rhodes and its magnificent-looking though now useless fortifications would go far towards compensating the French for its lack of military importance, except as a depot and place of arms; its two perfectly sheltered harbors are fit for little besides gunboats or craft drawing not over 10 or 11 feet of water. Favored by a southerly breeze, I succeeded in getting in with a draught of 13½ feet, but a north wind often quickly reduces the depth.

As to the fate of Constantinople, the most intelligent and unbiassed politicians I met in the East looked forward to its future as a free city protected by a joint European guarantee. It is very certain that no other solution of the difficulty is possible without a stupendous and sanguinary struggle, unless indeed it should in time become the capital of Bulgaria, or of a confederation of Balkan states.

Austria can scarcely be taken into account, since nothing but the temperate wisdom of her present exemplary emperor holds together a group of mutually antagonistic races, morally certain to fall apart on the accession of the reckless madman who has become the heir-apparent of the dual monarchy.

The Greeks have, of course, their traditional aspirations. But the stability and sobriety of the Greek kingdom remain to be proved, though its respectability would probably be increased by some augmentation of territory. At present the Greeks are too weak to be respectable or serious. For the world's good, the opposite sides of the Bosporus and Dardanelles, European and Asiatic, ought never again to be held by one and the same power. The demolition of the forts on the two straits would give to Russia and the smaller Black Sea and Balkan states a free exit to the outer world; while Russia, by becoming far more vulnerable than at present, with Turkey as a barrier in her front, would occupy a position in which she could always, in the improbable event of wrong-doing on her part, be made very promptly amenable to Western pressure in the interests of Europe at large.

DR. KEELEY'S TREATMENT FOR DRUNKENNESS.

In a little town in Illinois called Dwight, on the Chicago and Alton Railroad, there has lived and practised his profession for twenty-five years past a certain Dr. Keeley. The world at large has heard little of him until recently, but during all his professional career he has enjoyed the respect and confidence of his neighbors, and has been a member in good standing of the county and State societies which determine those ethical questions which appear to be of more significance to medical men than to those in other learned professions. He has long been engaged upon investigations as to the cure of drunkenness, and, it is said, these studies have been but a continuation of those made by his father and grandfather in the same direction. For several years past the newspapers in the neighborhood of Dr. Keeley's home have contained more or less full accounts of his having cured by the use of double chloride of gold men who had long been regarded as hopeless drunkards.

Something like a year ago Mr. Joseph Medill, the venerable editor of the Chicago *Tribune*, had his attention attracted to this new method of treatment, and he had an examination made of it. What he learned influenced him to make a practical test of the alleged cures. He therefore selected several men in Chicago who were looked upon as hopelessly addicted to the habit of drinking liquor excessively, and who also appeared to be wrecked by this long-continued intemperance. These he sent to Dwight, and engaged to pay their expenses while undergoing treatment. The result was so satisfactory to him that he endorsed the methods employed by Dr. Keeley in an editorial article in his paper. Naturally enough, this endorsement, a most unusual thing from a paper of the class of the Chicago *Tribune*, attracted very general attention, and soon afterwards there was a tide of patients turned towards the little village of Dwight, whither hopeless men travelled in search of something which before had seemed beyond their reach.

Arrived at Dwight, these pilgrims found a straggling village, with muddy or dusty streets, according to the prevalence of rain or sunshine, and there was only one thing to make it seem different from any other Western village in which twelve hundred persons had their homes. This difference was noted almost at once. There were well-dressed and well-appearing men on the streets in considerable numbers who evidently had never taken any active part in village life, and who were not now of it. These were the pilgrims, these the patients, who had gone to see whether the bichloride of gold treatment could quench their fiery thirst.

The impulse which each new patient brings with him, it is said, is to conceal his identity; but as there are men from all parts of the country there—and this is but a very small world, after all, as every man who has travelled away from home has found out—this concealment is all but impossible, and the great majority are soon content to settle down, and, acknowledging to themselves that their inebriety is a disease which they as sensible men are trying their best to cure, each in his own personality, and with whatever weight that may add to his words, tries to encourage the new-comer, and to contribute his best to the fellowship and comradeship of the community. And, singularly enough, these patients, once dismissed as cured, never, it is claimed, make any effort to conceal the fact that they have been treated at Dwight for inebriety. The idea among them seems to be that this form of disease may come as typhoid fever comes, and its cure is a matter for congratulations without any concealment whatever.

The increasing number of patients has necessitated the building of a hotel; but previous to that they boarded around at the various houses and cottages in the village. A new patient, after registering at the Keeley Institute, is given instructions as to the routine of treatment. He is given a bottle of the bichloride of gold mixture. This he must take once every two hours, and four times every day at stated hours he must fall in line with the other patients with bared arm, and receive a hypodermic injection of a medicine the nature of which Dr. Keeley has not announced to the world, but which he explains to his patients is intended as a "bracer," and also to regulate the effects of the bichloride of gold. His method of preparing his gold mixture he also retains as a secret.

I have talked with several persons who have been treated there, and what has been written above, I gathered from them. They say that it is not at all necessary for a man to be drinking or under the influence of liquor when the treatment is begun, but that if a new-comer be drunk when he arrives, Dr. Keeley can sober him up in from twelve to thirty-six hours so that he will never want to taste a drop of liquor again as long as he lives. One of the gentlemen to whom I talked had been at the Asylum for Inebriates at Fort Hamilton for ten weeks before he went to Dwight. He had also, he said, been to other places of the same kind, and the only encouragement he ever got was that he himself could cure himself if he would only stop drinking. "The difficulty with that was," he said, "that whenever I began a spree, I never meant to take but one drink to make me feel better. At least that is what I said to myself, though I knew I was lying all the time. Well, after I had been at Dwight for a week and undergoing treatment there came a miserable day—rain, cold winds, and general gloom. I was depressed and blue, and if I had been in New York I should have taken the drink I craved, with the inevitable result of a spree with all its wretchedness and degradation. So I went to see Dr. Keeley, and told him how I felt. He got out a bottle, and gave me a large glass of whiskey. I protested against drinking it, but he persisted, and I swallowed it. He then instructed me to come again in the evening for another drink. Here was a test of the treatment. In my previous condition, and feeling as I did that day, the first drink would have been followed by an almost immediate desire for more liquor; but the afternoon passed away and I had no craving. In the evening Dr. Keeley again handed me the whiskey. I declined, but he again insisted. I really did not want it. I asked for no more, and from that evening till now I have never once felt any longing for liquor." This was from a man who has been known to me for fifteen years, and who in his profession has been a man of mark for a time even longer.

There has been established in Dwight a Bichloride of Gold Club, and in August there were more than one thousand members. Of course not all of these are in Dwight, as a man does not usually linger there after concluding the purpose of his visit. The club is a very democratic organization, and its members remain on the list for life, or until they can no longer report that they abstain from drinking liquor. Since the organization of the club only one per cent. of those joining it have had their names removed on account of a lapse into intemperate habits. One purpose of the club is to keep track of those who have been at Dwight, so that some statistics may be gathered as to the lasting value of the treatment. The members all wear the club badge—a blue and gold button—quite as conspicuous as the button of the Loyal Legion, and much more so than that of the Grand Army of the Republic. I actually saw one of these badges worn in the button-hole of a New York man of great fashion, and his millionaire father appears prouder of his son's recovery from the dissolute habits into which he had fallen than of anything else in the world.

In Chicago a branch of the parent club has been formed, and of this branch Mr. Opie P. Read, the well-known humorist, is the president. The Chicago club has issued an address to the public, and proposes to send to Dwight for treatment those who themselves are not able to bear the expense. To this end the club appeals to the public for assistance. In New York a branch club has not yet been organized, but the preliminary steps have been taken. The statistics to be gathered by these clubs will be valuable in themselves, but the main object appears to be to keep those who have been cured from lapsing again into their evil habits.

Dr. Keeley also announces that by a similar treatment he can cure persons addicted to the opium habit. It takes longer to do this, but of his ultimate success he has no doubt whatever. I could find no one to bear direct testimony on this point. Those I saw who had been at Dwight said that the proportion of opium-eaters to ordinary inebriates was very small, but that it was well understood that the treatment was entirely efficacious. Women are also treated for both drunkenness and the opium habit. All men are required, as has before been said, to fall in line, and openly take the medicine. Women, however, are visited privately, and are treated with all due regard to the feminine horror of publicity.

The claims made by Dr. Keeley that he could cure drunkenness by a use of bichloride of gold, and the enthusiastic reports made by patients who have submitted to his treatment, and believe that they have been cured, have stirred up medical men all over the country to discuss this claim and these reports. These gentlemen almost unanimously refuse to believe in either claim or reports. They maintain that the continuous and excessive use of liquor affects not only the body of man, but also his mental and moral faculties. With mental powers impaired and the morals debased, it seems incredible to them that any medicine can restore a man to the condition in which he was before this triple process of decay began. One of them has pointed out the fact that Roger Bacon, the alchemist, as far back as 500 years ago, asserted that he had discovered in *aurum potabile*—that is, tincture of gold—the veritable elixir of life, to drink of which would restore age and decrepitude to youth and beauty.

Dr. William A. Hammond has recently said on this subject in the *North American Review:* "Certain tonics and sedatives are required in the course of treatment to overcome conditions that may be produced in the habitual drunkard when his customary stimulus has been taken away; but as to the specific influence of the nitrate of strychnia, which has had its day, and the double chloride of gold and sodium, which is now being palmed off on the public as a certain cure for drunkenness, I have only to say that their use in such connection is most irrational, unscientific, and delusive. Almost every drunkard can abstain for a time, more or less long, by the mere effort of a very weak will, and actuated by a desire to think that he has got something to cure him; but I venture to say that there is not one single case of a cure by either of these agents, or any other agent, by the unaided power of the drug. Strychnia, or gold, or almost anything else, will, when used in the case of sensible persons who sincerely desire to be cured, and who are imbued with confidence in the physician, prove efficacious. I have cured patients with a daily hypodermic injection of a few drops of water, combined with the influence or mental predominance I happened to have over them; but that there is any antidotal power in the chloride of gold or any other drug is the purest kind of fiction. I have used the chloride of gold hypodermically in my practice for many years, and I have never witnessed a single case in which it abolished the taste for alcoholic liquor. Neither do I believe that there is any such case in existence."

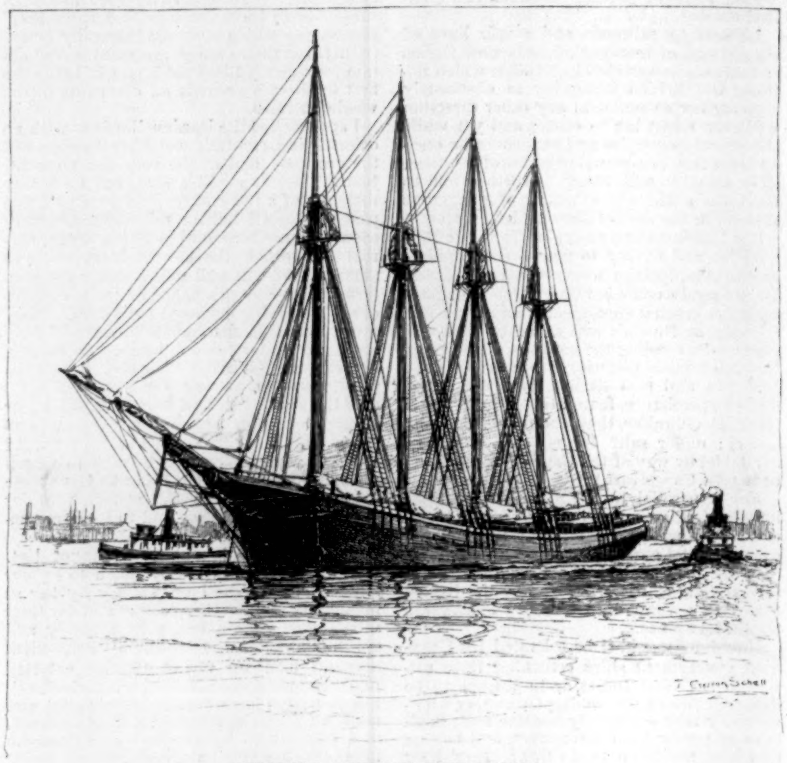
On the other hand again, Dr. Keeley and his friends maintain that those who attack his methods and deny his cures either do so through ignorance or from interested motives. He has not announced how he prepares his bichloride of gold, nor has he told what he uses as a subcutaneous injection; therefore, he says, his medical brethren have nothing on which to base any honest attacks upon his treatment. It has long been held, I believe, that any secret medical treatment should be discouraged by the various societies which make it their duty to suppress and discourage charlatanry and punish malpractice. Those attacks upon Dr. Keeley's method of treatment which it is alleged are interested come, it is said, invariably from those interested in institutions already established for the cure of nervous diseases and inebriety. The enthusiastic New York gentleman whom I have quoted before, and who has been in half a dozen of these institutions, says that attacks coming from such places are manifestly unfair, for if the public once learns of the efficacy of Keeley's treatment, these institutions will soon be empty of patients.

JNO. GILMER SPEED.

"FOUR-MASTERS."

BY HENRY P. MAWSON.

THE competition of iron hulls and steam has forced upon the builders of sailing vessels a new era in ship-building. For a number of years the white-winged vessels suffered at the hands of the puffing and throbbing steamship; modern science lay awake at night plotting the destruction of sail area, and the reduction of the transatlantic passage to five days, and perhaps less. In the mean time wooden-ship building languished, the "skeleton upon the stocks" gave way to ribs of iron and steel, and the trade of ship-carpentering threatened to become one of the lost arts. But the four-masted schooner and the five-masted ship, for certain commercial purposes, are driving to the wall the "tramp steamships," and once more asserting the triumph of sail over steam.



SCHOONER "GEORGE E. WALCOTT."

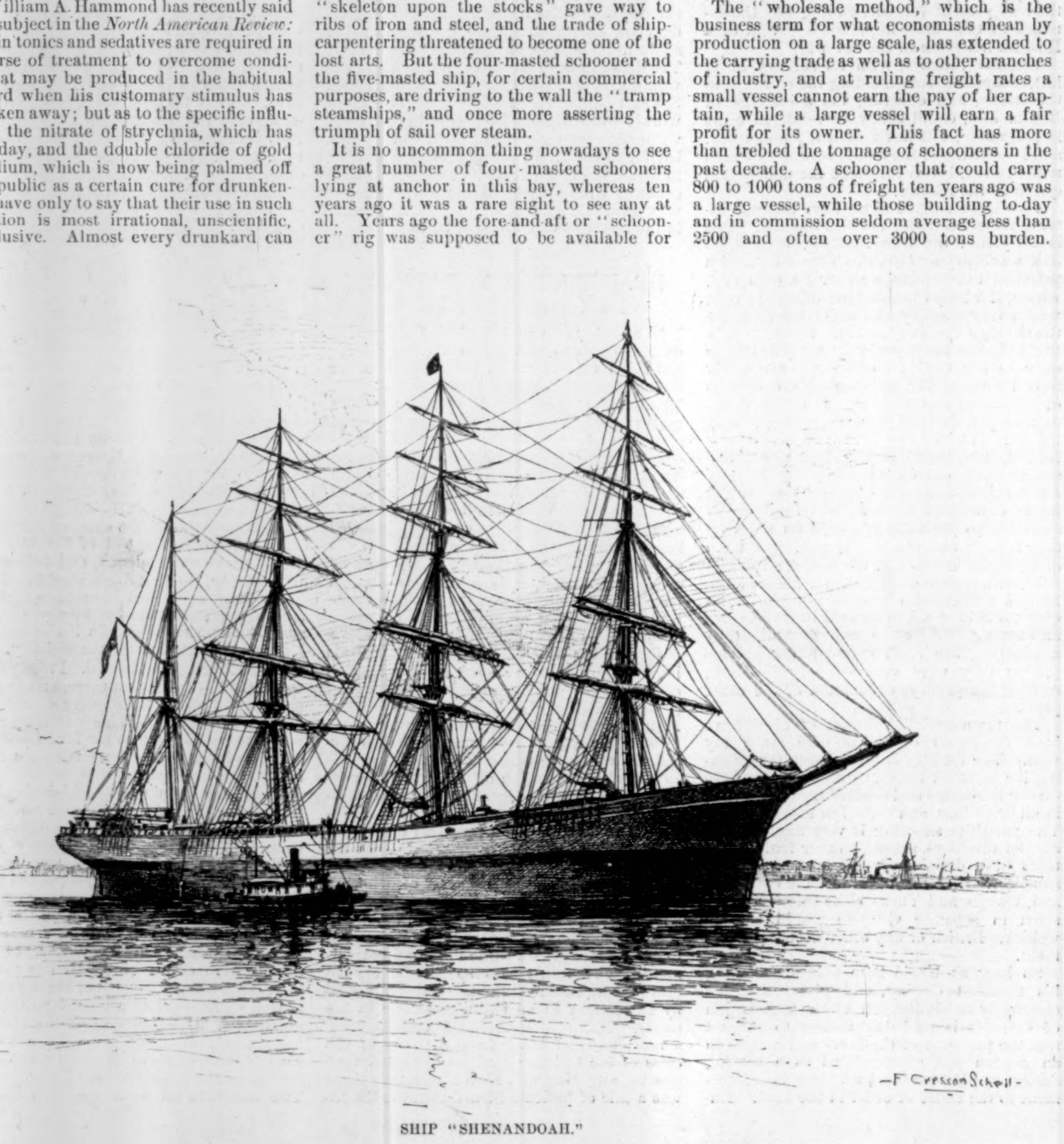
It is no uncommon thing nowadays to see a great number of four-masted schooners lying at anchor in this bay, whereas ten years ago it was a rare sight to see any at all. Years ago the fore-and-aft or "schooner" rig was supposed to be available for none except comparatively small vessels, and the limit was fixed at two masts. But with the extension of the coasting trade—for schooners have always been largely employed in this branch of our commerce—larger and faster vessels became necessary, and it was found that with corresponding increase of sail area larger masts and spars would be required, larger too than could be safely or conveniently handled at sea on two-masted vessels, so the experiment of three masts was tried. Of course, as is the case with all innovations, there were wise heads shaken very sagely, and predictions of disaster were heard on all sides; but the experiment was a success, and in a very short time three-masters swarmed up and down the coast from the St. Lawrence to the Gulf of Mexico, while the antediluvian two-masters were relegated to the river and inshore traffic.

The "wholesale method," which is the business term for what economists mean by production on a large scale, has extended to the carrying trade as well as to other branches of industry, and at ruling freight rates a small vessel cannot earn the pay of her captain, while a large vessel will earn a fair profit for its owner. This fact has more than trebled the tonnage of schooners in the past decade. A schooner that could carry 800 to 1000 tons of freight ten years ago was a large vessel, while those building to-day and in commission seldom average less than 2500 and often over 3000 tons burden. Along with this increase in size came another mast. Now the four-master is king, but we hear already of five-masters; but the latter is carrying the idea too far. It is doubtful whether they will prove to be seaworthy ships. The first five-master, named the *Governor Ames*, is already afloat, however, and her career will be watched with much curiosity. She is the largest schooner afloat. She was built at Waldoborough, Maine, in 1888, for C. A. Davis, of Fall River, Massachusetts. Her registered tonnage is 1690, while her carrying capacity is nearly 3500 tons. How long the four-master will retain her supremacy depends upon the success of the *Governor Ames.* Contemporary with the development of size and rig has come the introduction of still more remarkable changes in the "fitting out" of these big schooners. Big ships require big crews was the opinion held years ago, but enterprise and labor-saving demands have made big crews unnecessary for these four or five masted schooners. Ten or twelve men is a full complement nowadays; the work of double or treble that number of men is now done by machinery.

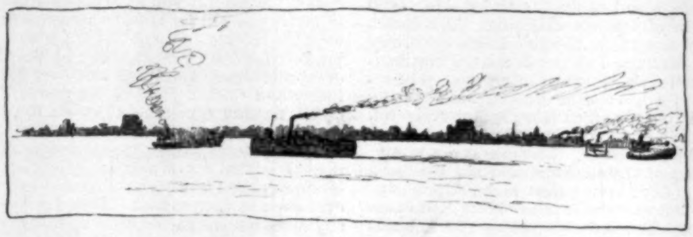
Another case of the lion and the lamb lying down together: a schooner is very badly equipped nowadays that does not carry an engine, and weigh anchor, hoist the sails, trim sheets, and take on board her cargo all by her own steam. This engine does everything except reef the sails; but for this, even a smaller crew could handle one of these ships. This is almost enough to make John Paul Jones turn in his grave! The merry "Yeave ho!" is now accompanied in the bass clef by the snorting of the "donkey-engine"; but "Jack Tar" has benefited by the change, and icy-riven halyards no longer tear his hands, but steam sets the "sail taut," and helps to lessen the burden of the sailor's bleak calling. These schooners cannot carry steam-whistles, because there would be danger of their being mistaken for steamships at night; but they do carry steam fog-horns, and make noise enough to frighten all the fish into hysterics. When steam was adopted on board these schooners the experiment of an auxiliary screw naturally suggested itself, the idea being taken from the English yachts. It was tried several years ago on two schooners, but the experiment proved a costly one, as one of these vessels, the *Louis Buckley*, was lost, and the other soon abandoned her screw.

They proved failures as steamers and as sailing vessels. Nearly all these large schooners are built on the rivers and harbors of Maine, though Connecticut also launches a few. The Delaware, once the home of our fastest "clipper" ships, has almost entirely been superseded by iron-ship building, although one firm at Wilmington, Delaware, turns out some very fine four-masted schooners; they are built there of Delaware live-oak, and, as a rule, are stancher than their Maine sisters, where too much soft fir and spruce is put into the ship. The largest of these schooners are used for carrying cargoes in bulk, mostly coal, between Philadelphia, Baltimore, Norfolk, and the Eastern and Southern ports.

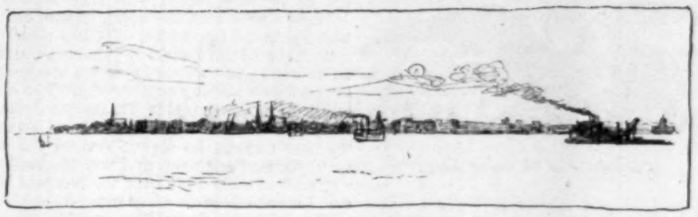
It was one of these huge colliers, the *Cornelius Hargreaves*, bound from Philadelphia to Fall River, which ran down and sank the Spanish steamer *Vizcaya* off Barnegat in October of last year. These vessels are great sailers, often making thirteen knots an hour, and it was probably the failure of the *Vizcaya's* captain to allow for this fact which led to the disaster. A four-masted schooner built of live-oak of 2500 tons burden costs about $45,000.



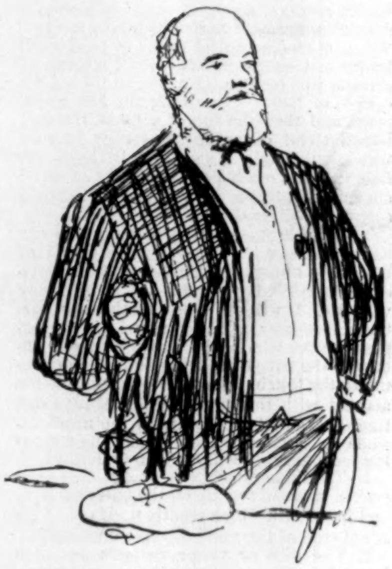
SHIP "SHENANDOAH."



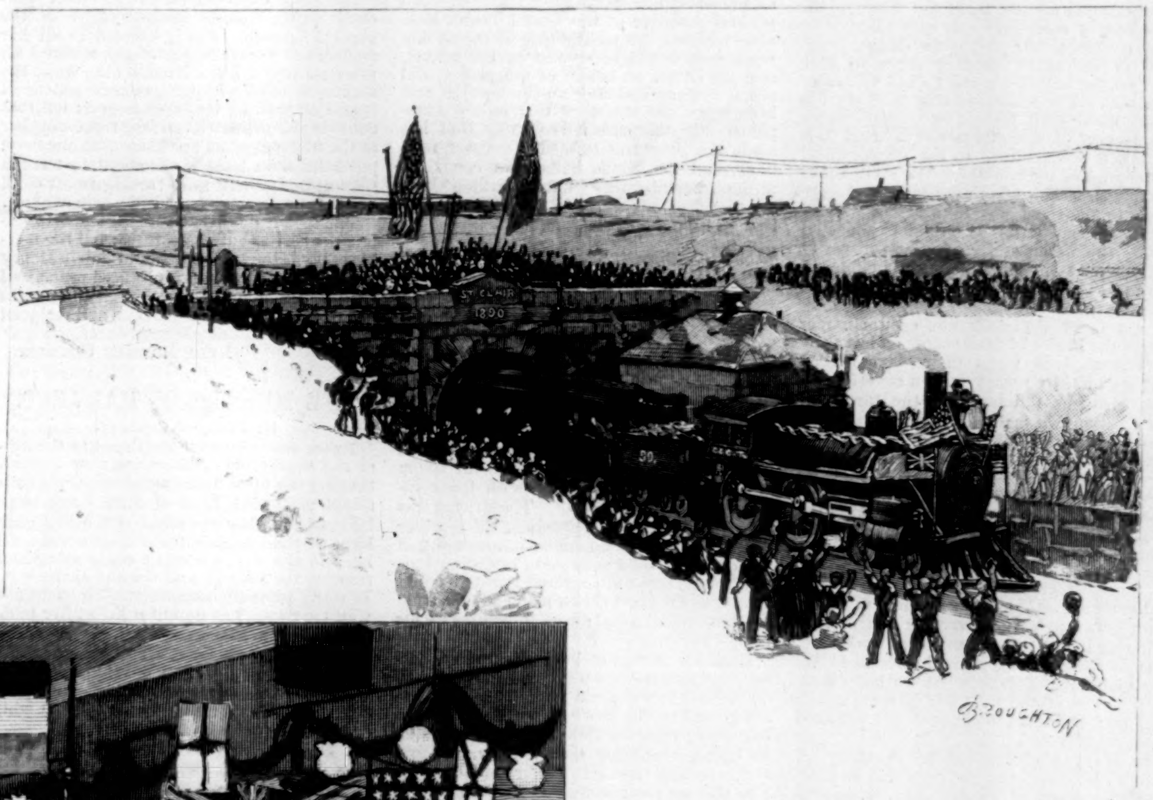
PORT HURON.



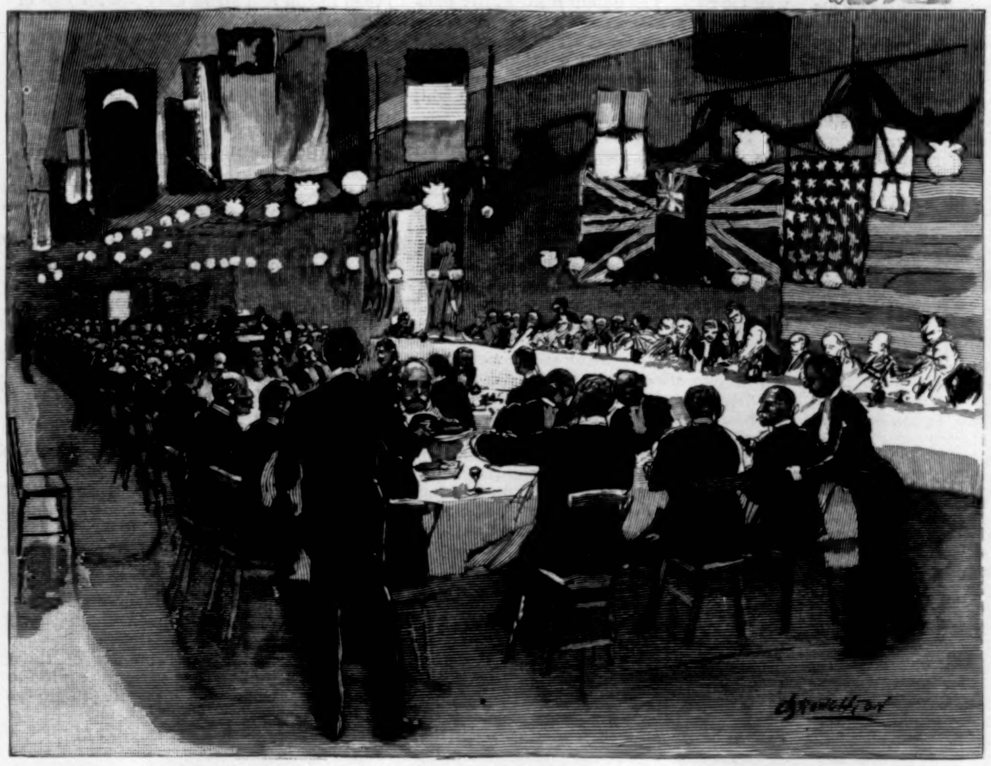
SARNIA.



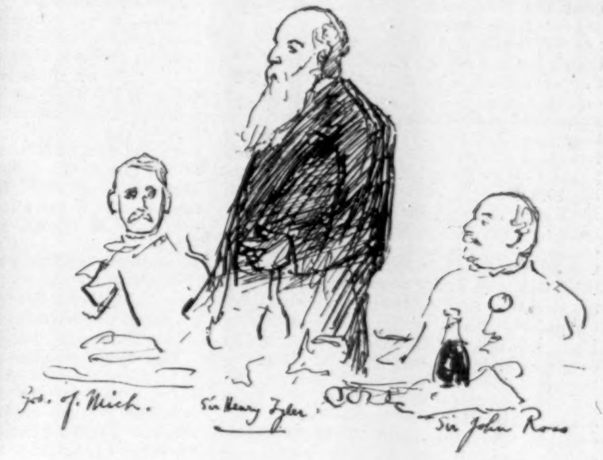
MR. KLENDENNING—BOARD OF TRADE, MONTREAL.

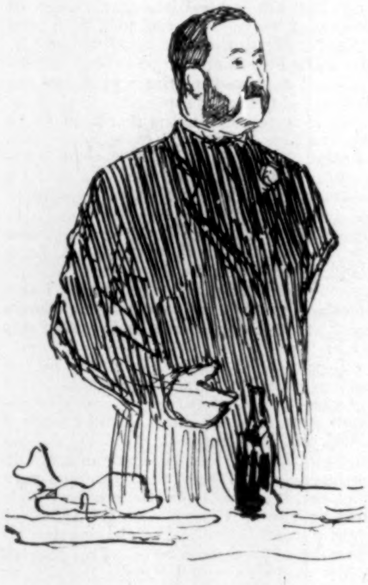

ST. CLAIR
1890
C. BROUGHTON

THE INAUGURATION TRAIN COMING OUT OF THE TUNNEL ON THE AMERICAN SIDE.

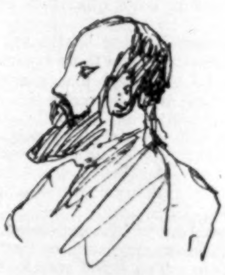

C. Broughton

THE BANQUET.

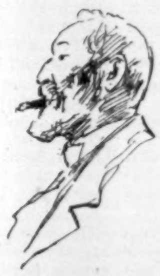

Gov. of Mich.
Sir Henry Tyler.
Sir John Ross



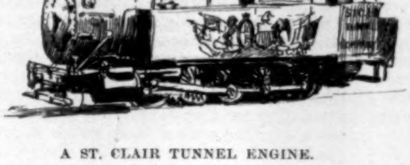
MR. ERASTUS WIMAN—"TRADE AND COMMERCE."



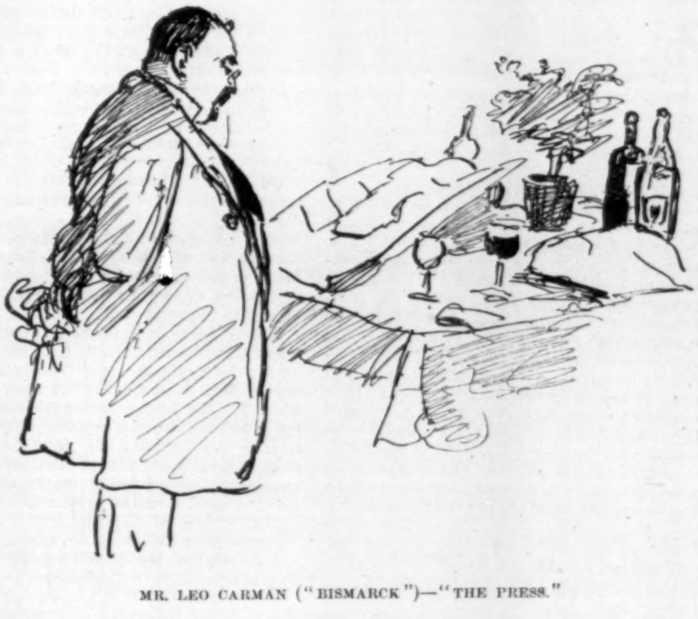
THE MAYOR OF MONTREAL.



THE MAYOR OF SARNIA.

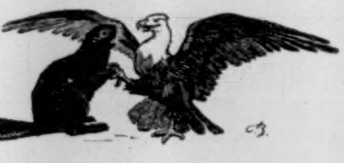


A ST. CLAIR TUNNEL ENGINE.



MR. LEO CARMAN ("BISMARCK")—"THE PRESS."

SKETCHES MADE AT THE OPENING OF THE ST. CLAIR TUNNEL.—By CHARLES BROUGHTON.—[SEE PAGE 758.]



Canada and the United States

OPENING OF THE ST. CLAIR RIVER TUNNEL.

Inter-State communication is being strengthened all the time, and through the channels of commerce and easy intercourse thus opened to the people, the mutual interests of the entire country serve to bind and render indivisible the United States of America. The jealousies that arise are not based upon hard feeling or enmity, rather the results of friendly rivalry. And this feeling is not confined to the geographical boundaries of the country. We invite other nations to send yachts over here, and urge them to do their best to beat us. Meanwhile we send our food products and gold across the water, and share our prosperity with them. Of course the first thoughts are for the country, but after that we are glad to give them out of our abundance, and, as a sort of compensation, each summer marks the hegira of fashionable and wealthy Americans, who wend their ways abroad and spend their money with a cheerfulness that gladdens the heart of the foreigner. As a nation, we maintain respect by friendliness rather than standing armies and big navies. We are not belligerent, nor do we post armed guards on the frontier to examine passports and insult the visitor. We are not exclusive, except as regards the Celestial, and do all in our power to promote good feeling. Mexico and Canada are our only next-door neighbors, and between us the most cordial relations exist—speaking generally. Where kindly nature runs a river between, we get over the difficulty by bridging it, or else science comes to our aid, and we disregard the natural division by going under it. This is what we have done in the case of the St. Clair River Tunnel, and our Canadian neighbors are annexed commercially.

In Harper's Weekly for February 28, 1891, a full account of the work and its progress was given in an able and exhaustive article. The tunnel proper had just been completed, but a great deal of work still remained before the way would be opened for general traffic. The mode of construction and the general results were stated in the article referred to, and it only remains to record the completion of the great work. Whoever has crossed the river by way of the ferryboats, and fretted at the delay in taking the cars off and on, will rejoice at this time-saving mode of communication. The old way was one of the impediments of travel that is now done away with, and it is these precious few minutes, that are being redeemed all the time, which count so much to the modern traveller. Saturday, September 19th, was the eventful day upon which the formal opening of the tunnel was celebrated. Port Huron, Michigan, and Sarnia, Ontario, smiled at each other across the waters of the St. Clair River, and knew that their bonds of amity were strengthened by the steel rails running through the sub-aqueous excavation. A special train started from Point Edward, and received a distinguished company of guests and officials. Running to Sarnia, the company was increased, and near the approach to the tunnel the train halted. The Mayor of Sarnia read an address, to which Sir Henry Tyler, president of the Grand Trunk Railway, responded. Then the first official train passed through the tunnel, and was met at Port Huron by Mayor McIlwain of that city. There were the usual speeches and congratulations, and then everybody got on board the train, and went to the Chicago and Grand Trunk Passenger Station at Port Huron. Then they returned to Sarnia by way of the boat, and sat down to a banquet which was served in the freight-shed. The shed had undergone a transformation for the occasion, and the unprepossessing interior common to such places was completely concealed by the mass of decorations. Sir John Ross, Commander-in-chief of the troops in Canada; Governor Winans, of Michigan; United States Consul-General Knapp, and a number of other officials and public men made up the guests present. Sir Henry Tyler opened the post-prandial ceremonies with a toast to the Queen, which was followed by a toast to the President of the United States. "The Governor-General of Canada" and "the Governor of Michigan" were not forgotten, and the chairman came next when the "Success of the Grand Trunk and St. Clair Tunnel companies and Sir Henry Tyler" was proposed. The "Engineers of the Tunnel" was responded to by Mr. Joseph Hobson, to whom the successful work is due; Mr. Erastus Wiman and the Hon. J. W. Palmer had something to say on "Trade and Commerce," and several other noted people made appropriate responses to various other toasts.

Sir Henry Whatley Tyler, M.P., who, as president of the Grand Trunk Railway, has had a leading part in the making of the tunnel, is an engineer of merit, and a graduate of the Royal Military Academy at Woolwich. His earlier services were devoted to the British government, from which he retired in 1877, at which time the honor of knighthood was conferred upon him. He has also been a member of the House of Commons, and is an able man in every way, and a recognized authority on railway engineering. The chief engineer of the tunnel is Mr. Joseph Hobson, who is a Canadian by birth. In this country and Canada he served several years as surveyor and engineer, and was the resident engineer of the bridge over the Niagara River. Later he became assistant and then chief engineer of the Great Western Railway of Canada. He has successfully encompassed all the difficulties of construction, and to him all praise is due. Sir Joseph Hickson, when general manager of the Grand Trunk Railway, realized the possibilities of the advantages that would be opened by the tunnel, and his efforts on behalf of the project did much toward awaking an interest in and bringing about the work that is now completed. In this case it is Canada that has made the overtures toward the closer relations, and the bonds have been cemented through her liberality; but nevertheless we are proud of our share in the undertaking, though it be the minor part.

A QUAINT CORNER IN WESTMINSTER ABBEY.

Having heard of a small collection of wax effigies of royal and other famous personages carefully guarded from the general public in an upper portion of the grand old Abbey of St. Peter at Westminster, two friends used the open sesame recommended, by writing to the "Reverend Canon in Residence" for permission to visit the same. With courteous promptness came the response, in the shape of an order of admission, "with the compliments of Canon F——." The writing was most intellectually illegible, and the receiver of the precious document was quite uplifted with the supposed possession of Canon Farrar's autograph, until assured that this could not be, as the great canon had gone off from the scene of his usual duties to recuperate his failing health.

However, it was at least the desired permit, and making our way through the familiar regions to the north aisle of the apse, we are guided by the gowned official who takes our order from us to a locked door, which he opens, disclosing thereby an uninviting staircase, and then left to our own devices. For this we are grateful, as we prefer to do our own explaining; and having mounted the steep enclosed stairs, with a turn to the right, we are confronted by an unpleasant-looking gentleman staring through a large window, which is the front of the cabinet in which he stands.

He does not look in the least royal, with his ugly hat hiding whatever forehead he may have, and his hands arranged in a very queer fashion; and it is difficult to realize that this is "the merry monarch" Charles II. The drooping black eyes survey the spectator with a disapproving and sinister expression, and the swarthy complexion and irregular features have not been flattered; but there is no trace of the fascination with which his graceless Majesty is credited. The rich suit of crimson velvet is wofully faded, and the magnificent lace on sleeves and cravat is nearly black with age. Like the Ancient Mariner, he seems to hold us with his glittering eye, this man of many vices and some virtues, who could jest in the very face of death, and apologize to his courtiers for being an unconscionable time in dying.

But there are nine more figures to look at in the queer little gallery, which we have quite to ourselves, and the next is in a recumbent position, and surrounded entirely by glass. It is a ghastly sight, this death-in-life effigy of the Duke of Buckingham after his assassination, attired in ducal robes and coronet, and the strong contrast of his Duchess and child in an opposite case, looking so full of life, makes it all the more painful. She is not handsome, this richly dressed Duchess, while the child is only a little woman cut short.

In the next cabinet stands, in all the pride of the magnificent robes which she wore at the coronation of Queen Anne, *la belle Stewart*, Duchess of Richmond and Lennox. The figure of Britannia on the coinage of that period is said to have been modelled from her own; but the stately dame has little pretension to beauty, although one of her last orders was to the effect that she was to be "as well done in wax as can be." This has evidently been carried out; and a favorite parrot, that died a few days after its mistress, is immortalized in the same way.

Queen Anne herself, in most unfamiliar guise, stands next, queenly but youthful, and by far the prettiest person there. Her short round face is more German than English, and with her bright dark eyes, and equally dark flowing tresses, regular features, and smiling expression, the great-great-granddaughter of Mary Stuart does not belie her ancestry. She is shapely too, this eighteenth-century Queen, but no sylph: there is a wonderful breadth of shoulder, that is more pronounced than in the statue before St. Paul's Cathedral, and the massive robes only add to what needs to be diminished.

Nevertheless, it is the one really pleasing figure in the collection; excepting, perhaps, little Lord Nelson, at the opposite end, who has a very nice face and is quite the hero, on a small scale, in his naval uniform.

Prince George of Denmark is not visible; but in a broad cabinet, side by side, stand William of Orange and Mary. The Dutch Prince, some time King of England, is very insignificant, and so low in stature that he is mounted on a pillow to bring the top of his head on a level with that of his towering Queen; but the effort is not quite successful. There is a great deal in every way of James II.'s elder daughter. The face is not pretty, like that of Queen Anne, and she has not a pleasant expression; there is something even crafty and unfriendly in the black, half-opened eyes. It is easy to believe that she was not too kind to her sister when the latter was only Princess Anne.

But more unpleasant than all is the apparently dying though upright effigy of the great Elizabeth. She is dressed in all her traditional grandeur, and hung round with priceless pearls, like a Hindoo idol, while the sceptre wielded with such consummate skill is still grasped by the taper fingers; but that convulsed, horror-stricken face represents her at the moment when she knew that one more powerful than herself was about to wrench the sceptre from her grasp, and leave her of all her vast possessions but a little strip of earth.

The dreadful horror of it still seems to agitate the small aquiline features; but the marble effigy below, on the grand tomb in Henry VII.'s chapel, is one of sculptured peace, and the inscription, after mentioning the glories of her reign, speaks of "a calm and resigned death." *Sic transit gloria mundi!*

Ella Rodman Church.

THE MUSHROOM HARVEST.

BY EDMUND COLLINS.

From one end of the continent to the other the mushroom-pickers are now abroad, ranging the open fields, meadows, and wind-swept pastures. Most of them carry large baskets, and they are afield at the first gray light of the morning, for if they remain till later in the day, the cattle come along and trample the fungus, and the sun shrivels it. In many parts the mushroom-pickers do not wait for dawn, but go out a little after midnight, carrying lanterns, scouring the down meadows and pastures. The expert picker knows, after two or three days, just where to look for a cluster of these plants, and goes straight to the spot at any hour in the night, cutting each one off at the root.

I know nothing more weird than to see, on a dark night, a score of lanterns bobbing along over the silent stretches of marsh and through the uplands. When I first saw them, a little while ago, in the valley of Evangeline's land, I thought they were a congregation of will-o'-the-wisps, for these marshes, which Longfellow has so accurately described, though he never saw them, are favorite regions of jack-o'-the-lantern. In a couple of hours the basket, which may contain a bushel, is filled, and the gleaners return to the nearest railway station, where the mushrooms are deposited before the dew has yet dried upon them.

From a thousand railroad stations, great and small, in the United States and Canada, every morning from the 1st of September till well on in October, there is one freight car loaded almost entirely with mushrooms. Only the fresh ones are shipped, and these reach the market as crisp almost as when gathered; but it is necessary to use them at once, otherwise they turn brown, become tough, and lose their flavor. The natural mushroom season lasts only about six weeks, but the enormous quantities gathered from the fields fall short of supplying the market for that time, so that now one ordering mushrooms in nearly any restaurant is served from cans. Most of the wild or natural crop is bought by private individuals, and if the dealers have more than they can sell, they dispose of them to ketchup and sauce manufacturers. The natural mushroom crop probably yields about 200,000 bushels a day, but when the plants shipped to distant markets reach their destination, large quantities of them are spoiled.

The wild mushroom is more brittle, succulent, and better-flavored than those grown in caves, cellars, and darkened places, and afterwards put in tins; it is also many times larger, spreading out like an umbrella on coming in contact with the air. The mushroom family is a very numerous one, comprising, in round numbers, about a hundred varieties. This includes many unwholesome members, and one which is deadly poisonous. The worthless members of the mushroom family receive various names, such as toad-stools, fairy-caps, etc. The belief was held for a long time that toads slept at night on the top of large mushrooms, and it was also believed that the fairies used the plants for caps, and wore them during their revels on the open glades and downs at night when the moon was shining. I do not know how this fiction became a common belief, but suppose it was owing to the rapid growth of the plant, which burst through the sod during the night, standing an inch high in the morning, and often five or six inches in diameter at the top. It is a mistake, however, to suppose that the mushroom attains its growth in one night; in that period the plant merely bursts through the sod, expanding rapidly on contact with the air. The spawn from which it grows has been propagating for two or three weeks; and this spawn thrives best in ground run over by sheep, kine, horses, and other cattle.

One night I was out with a party of mushroom-pickers at Grand Pré, which is a portion of Evangeline's land. One of the number said to me, "If you have patience enough to-night, you will see mushrooms grow"; and then he led me to a spot in a pasture that produced a couple of hundred of the fungi every morning. While the rest were darting hither and thither picking the plants, I lay down, putting my lantern beside me, on a spot where my expert friend assured me several mushrooms would appear before morning. I waited for nearly an hour and was becoming tired of my vigil, but still kept my eyes close to the ground. Then I noticed a slight movement in the sod; a little nodule of clay was pushed up, and then the motion ceased; but presently a couple of withered blades of grass snapped, and I perceived a another movement in the little clay mound. The mushroom seemed to me to push itself by fits and starts; nevertheless, I believe the growth was regular. I remained there for a couple of hours after seeing the first movement, and then the top of a plant, rounded like the end of an egg, was fully in view through the sod. As soon as its head was free, it began gradually to spread out, and I am sure that by sunrise it measured as much across as a silver dollar.

The mushroom that is coming into our markets every day now by thousands of bushels is known to scientific men as *Agaricus campestris*, but of this there are many varieties. It will grow only on the open pastures, meadows, and downs which are exposed to the winds; the unwholesome members of the tribe like the shade and are clammy to the touch. Even persons whose fields abound with this plant cannot always distinguish the wholesome from the unwholesome fungus, but whoever bears the following facts in mind will have no difficulty:

1. The table mushroom, or *Agaricus campestris*, is usually white on the outer surface, and has a skin which readily peels off. This is not true of the unwholesome mushroom.

2. The gills or under radiants are of a beautiful salmon pink in the *A. campestris*, but the gills, as well as the whole plant, turn to a mahogany brown after it has been exposed to sun and air in the open for two or three days.

3. But this is the most definite test: The inner ends of the gills are not joined to the stem in the wholesome mushroom, but they are joined in all that are not edible. No one can be deceived by a poisonous plant if he keeps this fact in mind. Moreover, the flesh of the *campestris* is solid, and the perfume sweet and nutty. There is another edible member of this family, known as the horse-mushroom, which grows four or five times larger than the one described, but it is coarse, stringy, and almost devoid of flavor. The plant, however, above all others to be avoided is the *Agaricus fastibilis;* it looks almost exactly like the edible fungus, but the gills are joined to the stalk, though many of them are of a salmon or coral pink on the under side.

But, as I have said, the natural crop of mushrooms over the continent each year supplies only a part of the market for six or seven weeks. Mushrooms, however, are sold all through the year, and the great bulk of these are produced artificially in caves in the neighborhood of Paris, and under the city itself. Some mushroom farmers in these Parisian caves send from 400 to 3000 pounds to the surface every day through the year, and these are shipped fresh to all the near markets, while the remainder is sent to the canning factories. The French mushrooms are yellow, tough, and almost without flavor, and are nearly as indigestible as leather. Nevertheless, millions of pounds of these mushrooms are imported every year into the United States, and sold to private purchasers and the keepers of restaurants.

About forty years ago a number of market gardeners in this country decided to make the experiment of raising mushrooms artificially, but nearly every attempt was a failure, owing to lack of knowledge on the subject. They had not studied the importance of evenness of temperature, and paid little heed to the fertilization of the mushroom beds. Meanwhile France continued to send in hundreds and thousands of tins a year, and the price was about $1 50 a pound. It then occurred to certain capitalists that it would be well to utilize the natural caves in Virginia and other States. So skilful mushroom farmers were employed, and from that time on the enterprise has been fairly successful in this country. Numbers of caves were constructed in other parts of the country, and now the industry is in progress on Long Island, in Hoboken, in the suburbs of Chicago, Boston, and other large cities. I saw the other day the most extensive mushroom dealer in the United States, and he said this to me:

"I cannot understand why our people don't raise their own mushrooms. It would pay a profit of thirty per cent. to raise mushrooms here, and sell them at fifty cents a pound, which is less than half what is paid for them now. Of course those engaged in the business here keep their business very quiet, and it happens that there is very little known about mushroom-raising. Think of one mushroom farmer in Paris having twenty-one miles of mushroom beds! This country is just as well adapted for the business as France, and there are a hundred fortunes for those who want to go into the business." The United States consumes in a year not less than 10,000,000 pounds of mushrooms, and these, at fifty cents a pound, would be $5,000,000.

AMATEUR SPORT

There was a tremendous crush at Manheim last Friday to witness the opening of the long-anticipated international match between Lord Hawke's team and the Quaker City amateurs. Everybody was there with his wife. Swelldom turned out in force. The weather was perfect; all nature smiled; so did the local enthusiast, although his smile was kept in abeyance until the hour for drawing stumps disclosed the comforting fact that the first two national defenders, Crawford Coates and Walter Scott, had managed not only to knock off some twenty odd runs, but also to preserve their wickets intact.

Everybody had a good word for the excellent way in which the match was managed, the provisions made for the accommodation of the vast crowd that filled the stand and swarmed around the ropes. The beautiful ground, with its magnificent club-house on one side, and the graceful proportions of the airy-looking but substantially built grand stand on the other, received their full share of admiration not only from the spectators, but from the visiting English cricketers themselves.

The wicket was just such a one as the Philadelphian delights in; it was what he had been brought up on—as hard as a brick and as rapid as Maud S. It was, in fact, a batsman's wicket; the bowler could get very little assistance from it. On such a wicket it is little wonder that Lord Hawke's men, who were lucky enough to bat first, managed to roll up a respectable score.

And how did the Englishmen shape? Frankly, well, they are a good lot; much better than I imagined them to be; and while there are few among them who can be termed exceptionally brilliant batsmen, there are several who displayed very creditable form. Lord Hawke, as befitted a lord and a captain, was top scorer of his side. He is an excellent all-round hitter, inclined somewhat to pull short-pitched balls, but by no means lacking in defensive powers. He is, moreover, a man of superb physique. He had some luck in managing to get quite a number of balls just out of the fielders' reach; but, on the whole, he played an excellent innings. H. T. Hewitt and C. W. Wright made a capital start for the English side; both men played steadily, Wright especially so. H. T. Hewitt, a left-hander, is one of the best of the eleven, and would be a most dangerous man if allowed to get thoroughly set. I fancied C. Wreford Brown about as much as any of them. He has a nice position at the wickets, plays a very straight bat, and his off play is very clean and taking. This young gentleman is said to be a protégé of W. G. Grace. If this is true, he is a credit to his master, for he gives promise of being a remarkably fine bat. K. J. Key is not the batsman he was when he was in America with Landers's team, although he still bats effectively.

Lord Throwley seemed very ill at ease when he began his innings, being beaten again and again by balls that managed by some strange perversity to just escape his wicket. The revivifying influence of beef and beer seemed to exercise such a salutary effect upon his lordship that he plucked up a little spirit after luncheon, and managed to play more cleanly than he had done at first. Two hundred and fifty-nine is a pretty good score for a set of men who have hardly got rid of their sea legs—good enough to stamp them as a team who will take a lot of beating.

Of the bowling of the visitors I am unable as yet to say very much, but what little fielding they did was sharp, snappy, and effective as contrasted with the fielding of the local players, which was listless and altogether wanting in *élan* and dash. S. M. J. Woods has terrific speed, forcing the English wicket-keeper to play back several yards, but his speed seemed to have no terrors for the local batsmen, who played the bowling with the utmost confidence. It is doubtful, however, if he will come off on the fiery Philadelphia wickets, which have proved an obstacle to the success of more than one celebrated fast bowler in recent years.

The result of the Boston and Philadelphia polo weeks has been extremely satisfactory in binding the players of this section and those of the two cities named together in the common cause of sport. At Boston particularly it has been very gratifying to find such a truly sporting set. During the polo week on the Myopia's grounds, the sport was augmented by Gymkana games, racing, coaching, and hunting. In fact, the visiting teams had as much sport as it was possible to crowd into the ten days of their stay. The play of the Myopias was not particularly brilliant, though there were times in their play when they showed that the rudiments of the game were being mastered rapidly. In fact, in the first game they succeeded in beating the Newport players, but they did so because Stevens attempted to play the old No. 1 system, and would not listen to the new one as propounded by Captain Thorn. Moreover he had been travelling all night from New York, and having arrived just at the time of the match, was stale and had no spring in him. Since that game he has become not only a thorough convert to the new system, but an enthusiast, and has been playing in thorough form, and holding to his place with great good judgment. The playing of Havemeyer and Agassiz has been extremely good, and these two have made a very clever demonstration of the value of Captain Thorn's style of playing. The merit of this new system is that each man feels that he has a definite duty to perform, realizes his importance in the game, and knows that he will get the ball, and about where to stand in order to receive it.

A very valuable feature of this style of playing is that it absolutely does away with all brutality, and supplants riding out by placing the ball behind the enemy. Again, in case one is placed on the defensive, in two moves you get to the attack around the other team, nearly all of whom are pretty apt to be headed the wrong way. So successful is this new style of play, that I hear that Havemeyer will introduce it in the Country Club of Westchester team, and Agassiz will do the same for Harvard. I noticed another point with the Myopias and Hinghams. The Newports invariably went in for all they were worth in the first two twenty-minute periods, and bowled up all the goals they could; then they would lay off on the defensive; thus not only dividing their own work, but deceiving the opposing team as well. Each was sure to think the difference in results was occasioned by their own much-improved play. The more I follow this new system which Captain Thorn has introduced, the more I am convinced that we are only just beginning to appreciate the possibilities of polo development. This game has come to us directly from the English; so did foot-ball.

But we took hold of foot-ball with the characteristic American spirit, and the result is that our college foot-ball elevens of to-day are beyond question much the most scientific exponents of the game in the world. Whatever we take hold of in sport, we push to its greatest success. There is no game that with some practice we could not beat the world. Now, then, polo is just as susceptible of improvement as any other game, and why shouldn't we work at this as we have done with foot-ball? Why we have not done so before has been simply from the fact that those men prominent in the game in this country have relied on the English lines that have been laid down for them, and have been content to follow, with no thought of a special deviation. It has remained for W. K. Thorn, an American, to propose changes that are certain to work great improvement in our team play. One thing has been demonstrated by the Philadelphia and Boston weeks—namely, that there is not sufficient time between them to allow of much-needed rest. The Polo Association next year should arrange their games so as to make the regular Newport fixture earlier, and give a week more to play for cups offered by individuals.

The foot-ball captain's work is now well begun, and from this date until his last match be played at the end of November, he will have responsibilities as heavy as those of a prime minister and commander-in-chief combined. His first days have been spent in learning how many of his veteran aids he can muster about him. He hopes against hope that this one and that one so gallant in the contests of last season may once again appear by his side. Then comes his first series of disappointments as these hopes fall one after the other. But he takes on new courage at the reports he hears of incoming men—men of prowess even greater than that of those he loses. These he seeks out and puts in the field. Then come more disappointments, for not one out of a dozen of them proves an addition even to his common or scrub side. By the middle of October he is quite in the depths of despair. The keen edge of enthusiasm has been dulled among all his players. They have not yet been at work long enough to have their enthusiasm replaced by skill, and the result is that they *look* ragged indeed.

And at this lowest ebb of his fortunes come questions of policy to be decided—questions involving the interests of his team most deeply. He must arrange the dates of contests to his advantage. He must see that suitable referees are chosen—men well posted in the rules and cool of judgment. He must advise with his managers as to trips out-of-town; how much travelling his team can stand, what games will yield the best and most valuable practice. Almost before he knows it, November has come, and his team looks to his biassed eye no better than it did a month ago. Three or four positions are still unfilled. He has tried so many men that no one has had the advantage of steady practice, and now he reverts to some of the first candidates, and reproaches himself for the amount of time he has wasted in trying others. Men about college have suggestions to make, some say that he has shown favoritism in his choice, others that he is not playing the proper style of game, isn't kicking enough, is running too much, and is generally wrecking all chances of victory by his foolish course.

Almost before he has taught his new men the signals, the date of his chief match looms up. He can count upon the fingers of one hand the days that intervene, and he hastens to patch up the weak points of play. Then comes the night before, when he tosses from side to side upon a wellnigh sleepless couch, and thinks how much more he might have done with his team in another week. After a few wretched hours on the morning of the match, he is at last on the field with his men, he sees the enemy, the referee calls play, and what a relief it is for him to be actually at work. In two hours he is the most popular man in college; nothing is too good for him, and every one is clasping his hand. Or perhaps he drags his tired team off the field defeated. Only his most intimate friends have any consolation to offer. Wearily he pulls off the muddy canvas jacket and unlaces the lime-bedaubed shoes, while beaten, beaten, with no chance to redeem himself, rings in his ears, and proclaims the end of another foot-ball season.

Five Canadian records broken and one equalled is the result of the eighth annual championship games of the Amateur Athletic Association of Canada, held at Toronto last Saturday, September 26th. Beautiful weather appears to be the rule at games over the border, and this year was no exception, for the sun shone down in all its autumnal glory on about four thousand spectators, handsome grounds, and the full band of the Queen's Own Rifles. The management of the games was very good. Some improvements could be made, to be sure, but the Canadians are such thoroughly good sportsmen that one hardly has the heart to criticise. One big meeting a year is the extent of their athletic experience, but they are rapidly learning. A change should be made in the method of running off heats in the sprints, and the starting should be done by a man who has had sufficient practice to be known by the athletes and feared. A starter may have the best intentions in the world, he may send the men of his club off the mark to their utmost satisfaction, but firing the pistol at championships, where athletes come from the East and West, is quite another matter. Experience is the one credential to the starter, and he must have it, or the athletes are unsteady on their marks, and each, fearful less the other get some advantage, attempts to get off before the pistol.

The sprints created surprise among those who fancied they had kept track of the possible winners. Cary, M.A.C., was pretty generally conceded to be the winner of both the 100 and 220 yards, but when Harry Jewett, Detroit Athletic Club, of whom we have heard so much, ran his first heat of the 100, a few of us knew that we should hear something drop ere the afternoon was over. And so we did. The Detroit men thought Jewett would win the 100 final, but that was expecting too much, though after running two hard heats, both in 10⅗—hard, because the track was slow—he finished only two feet behind Cary in the final, and at the rate he was travelling looked a winner if another ten yards had been travelled.

Another man in the 100 yards, H. D. Carr, of the Montreal A. A. A., opened our eyes. This is the third year he has been running. Last year he ran second to Owen by two feet in 10⅘ in a trial heat, but in the final he made three false starts, and was out of the race. In the second heat of the 100 yards Saturday he finished easily in 10⅕, and in the second trials, after he had slowed down considerably, he ran second to Jewett in 10⅗. In his heats he had rather gotten the best of the start, but in the final he had, if anything, the worst of it. He actually jumped away from the others, and at 40 yards, where his leg muscle gave way and he stopped running, he was leading Cary by a yard. As he is said to be very strong at the finish, he would have come very near winning the 100 yards but for the accident. It is not so serious as reported, and he may be fit to run at the national championships next Saturday at St. Louis. If he does, it will take better time than that of to-day to beat him. He is an A No. 1 man. Jewett is all we have been led to believe—large and powerful, with a strong free stride, and a burst at the finish that is not to be headed. He will probably win the 220 from any man on the track to-day, but I hardly think him Cary's equal at the 100 yards. Vredenburgh ran well in the shorter sprint, and finished third. The 100-yard time of 10⅕ equals the Canadian record.

The time of the 220-yards' run—22⅕, breaking the Canadian record of 22⅗—is hardly what the men accomplished, for all of them save Vredenburgh beat the pistol. Vredenburgh was off with the rest, but, knowing he had beaten the starter, went back, while the others kept on and finished. Irving, a promising runner of the Toronto Lacrosse Club, took the lead at the start, and held it about 75 yards, when Cary went to the front, and then Jewett overhauled him, and was never headed, though Cary could have been nearer him at the finish, as he slowed up when he saw he was beaten. This is Jewett's great distance just now, and he is unbeatable. The 440 yards was a glorious tussle (as this column said it would be) between Downs and Remington. The latter's recent win set up the M. A. C., and they thought Downs wasn't in it; but he was, and gave as fine an exhibition of pluck as ever seen on the track. He was thrown out of his stride and pocketed, and ran at least 300 yards of the distance on the outside; he must have lost 15 yards, and yet he caught Remington, who was running easily in the lead, and, after a neck-and-neck race, won in 51⅕ by about a foot. Turner and Waldron ran a dead heat for third place, and both did well.

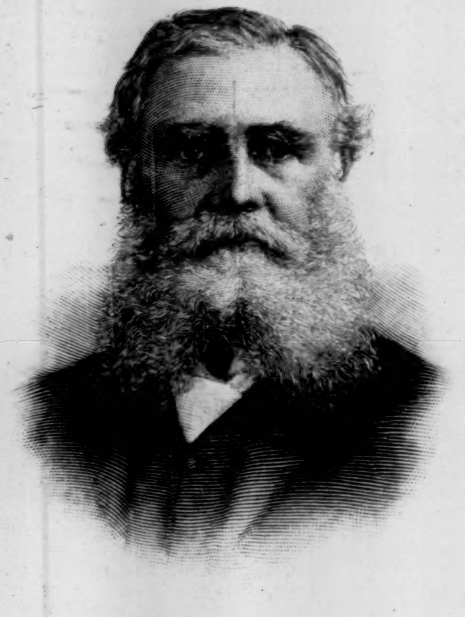
The half-mile of course Dohm captured, in 2.01⅕, with Waldron, the Montreal man, about 5 yards behind, and Paris, a colored boy of the Montreal Junior Lacrosse Club, still 3 yards away. Dadmun, M. A. C., cut out in the lead, and was expected to do something exceptional, but he finished last. There was no effort made by Dohm to break a record; he jogged the first quarter in 62 seconds, and he could have done better if necessary. There is no man to-day who can defeat Dohm, and very few who can extend him. The one-mile run brought the spectators to their feet. It was a beautiful race, and generally supposed to belong to George, M. A. C., easily; but he had to run hard to win, by about 7 yards, in 4.27⅗, breaking the Canadian record of 4.29⅘. George W. Orton, of the Toronto Lacrosse Club, a lad not eighteen, was making his first race in this event, and, after running easily in fourth place, on the last lap he went out and rapidly closed on George, finally finishing second, in 4.28⅕, also breaking the record. MacIntosh, another new man, of the Wanderers' Club, Halifax, finished third in good shape. Both these, but especially Orton, will make formidable men by next season.

Tommy Conneff won the two miles with utmost ease in 9.58⅕, having left the field out of sight; in fact, Carter was the only one to finish. The weights produced some surprises in the comparative poor showing of Mitchell, N. Y. A. C. He did fairly well in the shot, taking second with 39 feet 11¼ inches to George Gray's 45 feet 10½ inches; but in the hammer he did only 126 feet 6¾ inches, while Queckberner did 131 feet 3½ inches, thus breaking the Canadian record of 127 feet 11 inches made by Mitchell, at Montreal, last year. In the 56-pound weight Mitchell did 31 feet 2 inches, breaking the Canadian record of 30 feet 5¾ inches, and Queckberner took second with 29 feet 9¾ inches. Young Joseph Gray, a brother of George, is a coming champion at this game; he has the style, and seems to be getting the science. On Saturday he put 38 feet 6 inches; Giainnini made an excellent shot-put of 39 feet 3½ inches. The running high jump brought out another broken Canadian record, Nickerson making an exhibition of 6 feet 1$\frac{1}{16}$ inches; after he had won with 5 feet 11½ inches. The old record was 6.0¾. Edwards, N. J. A. C., and Powell, of the Pastime A. C., St. Louis, tied for second, and on the jump-off Edwards did 5.11½. Powell cleared 5.10, but he gives promise, if some trainer will take him in hand, of making a record for himself. He clears the bar facing it, and does not do the scissors act of all other jumpers. As for Nickerson, he jumped beautifully; he is unexcelled. Edwards had some hard luck, slipping several times, in the pole vault. Luce, D. A. C., won handily at 10 feet. Jordan, N. Y. A. C., and Potter, M. A. C., making a tie at 9 feet 6 inches, and the former winning on a toss. Luce vaults in fine style, and will clear 11 feet before he is much older. At the very last trial, in the broad jump, when Schwegler was making an effort to get third, lo and behold! he cleared 22 feet 4¼ inches and took first; Barnes being second, with 21 feet 11¼ inches; and Wiegand third, with 21 feet 11 inches. Some of these sure things do go wrong.

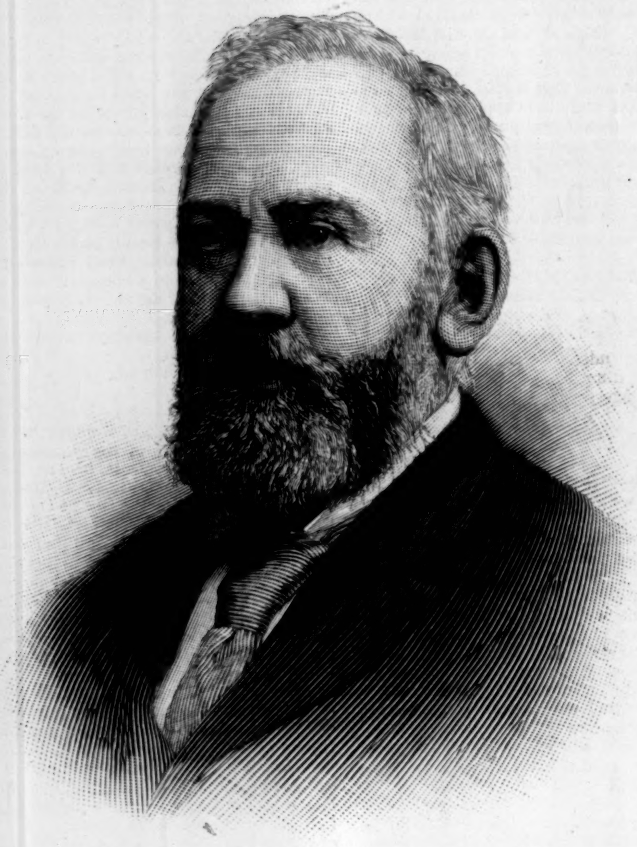
The hurdle event seemed strange without Copland; but it was a good race, with Ducharme, D. A. C., and Barnes nip and tuck the entire distance. They went over each hurdle together until the final, when Ducharme had gained a few inches, and beat Barnes out on the flat, winning in 16⅗; Schwegler third.

While we are on press nearly all these athletes are competing in the handicap games of the Detroit A. C., and on Saturday they all meet at St. Louis in the national championships, and there will be some very close contests. If the Canadian Carr gets his leg in shape, he will make Cary touch 9⅘, or beat him. Jewett, with Carr out of it, should take second in the 100 yards, and first in the 220. Downs and Remington will have even a greater struggle in the 440 than they had Saturday, and which of the two will win is too hard to say, though judging from Saturday's performance Downs seems to have the call. Dohm, of course, has the half. Dadmun may work into better shape, and hustle Turner for second, but he is not in it with Dohm for first. Conneff will take the mile and five, with George second in the former. In the hurdles, Copland and Ducharme will renew the old fight; both are in good condition, if the former's heel gets well, and record time should be touched. Mitchell will undoubtedly redeem himself, and take the hammer and 56; while the shot will be "too easy" for Gray. Reber, the Pastime A. C. jumper, who holds the world's record, should win that event, with Copland second. The pole vault will go to Luce; and the high jump, as it did at the Canadian games—Nickerson, Edwards, Powell.

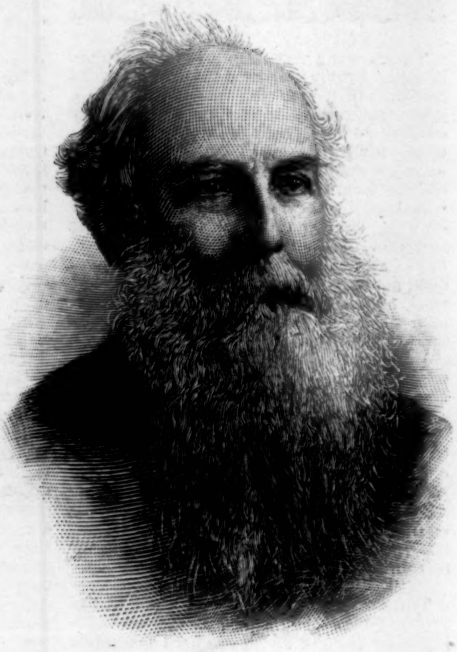
Caspar W. Whitney.



JOSEPH HOBSON, CHIEF ENGINEER OF THE ST. CLAIR TUNNEL.—[See Page 758.]



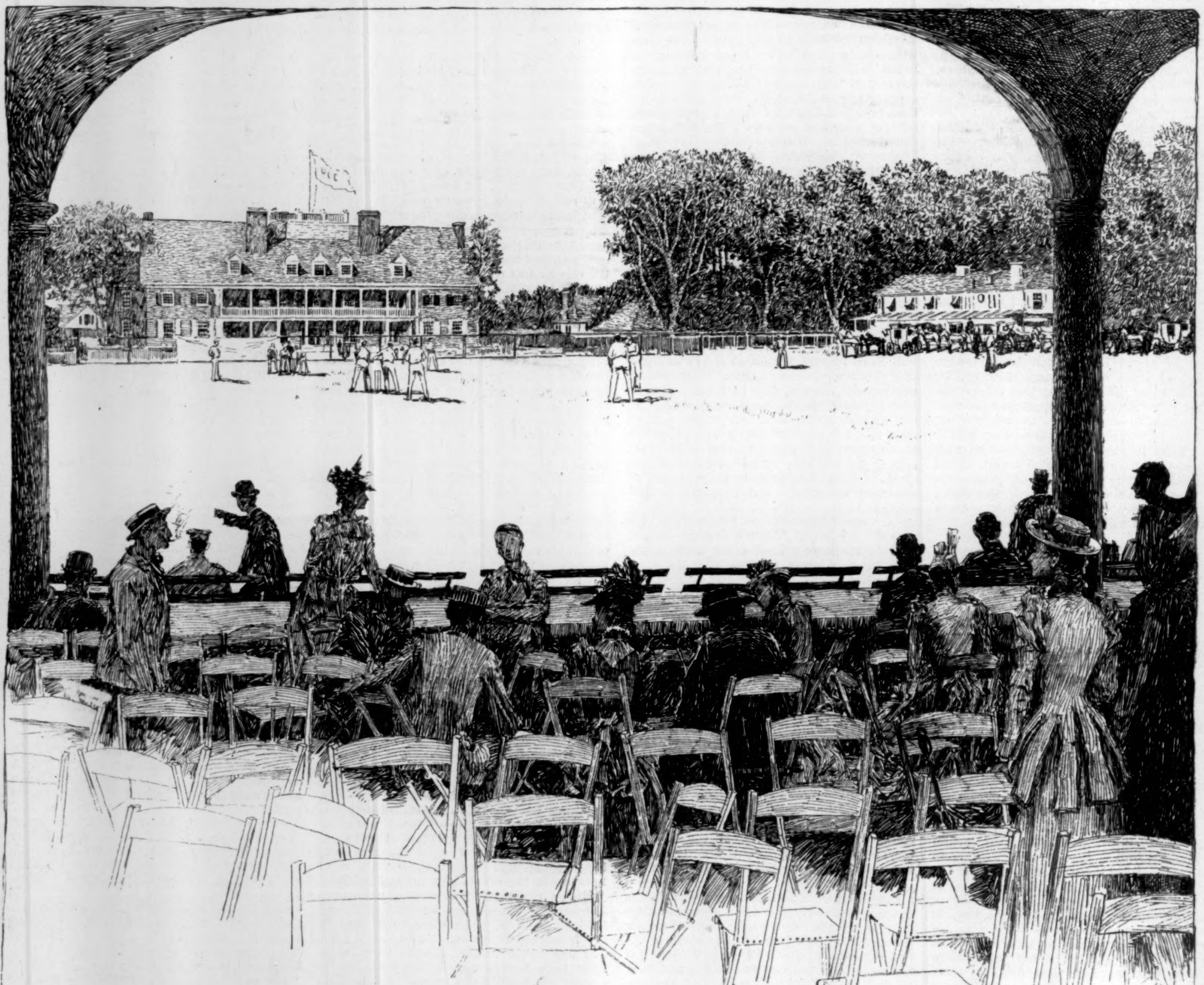
SIR JOSEPH HICKSON, PROJECTOR OF THE ST. CLAIR TUNNEL. [See Page 758.]



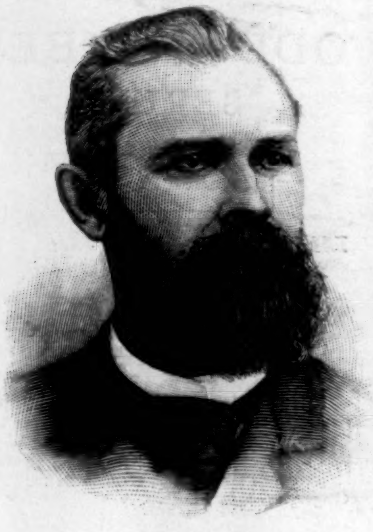
SIR HENRY W. TYLER, M.P., PRESIDENT OF THE GRAND TRUNK RAILWAY AND OF THE ST. CLAIR TUNNEL.—[See Page 758.]

THE NEW PRESIDENT OF SWARTHMORE.

Charles De Garmo, Ph.D., Professor of Philosophy and Pedagogics in the Illinois State University, who was recently elected President of Swarthmore College, was born in a small town of Wisconsin in 1849, and is in the prime of life for executive work. His early education, received in the public schools, drew his attention to the profession of teaching, which he followed for a year before he was of age. Entering the Illinois State Normal University, he completed the course in three years, and graduated with distinction in 1873. After being principal of the public schools in Naples, Illinois, for three years, he returned to his *alma mater* as assistant training teacher, and continued in this capacity for seven years. During this time the *Illinois School Journal*, one of the widest-known and best conducted school publications of this country, was



THE NEW "MANHEIM" GROUNDS OF THE GERMANTOWN CRICKET CLUB, PHILADELPHIA.—Drawn by F. V. Du Mond.—[See Page 759.]



PROFESSOR CHARLES DE GARMO,
President-Elect of Swarthmore College,
Pennsylvania.

founded by him, in connection with Professor E. J. James, of the University of Pennsylvania.

In order to further pursue his philosophical study, he went abroad in 1883 with his wife and two children. For three years he studied in the Universities of Jena and Halle, at which latter place he received the degree of Ph.D.; and he closely examined the methods and systems of education in the institutions of France, Germany, and England. He returned to this country to accept in the Illinois State Normal University the chair of Modern Languages, and subsequently that of Philosophy and Pedagogics in the Illinois State University.

Dr. De Garmo is a member of the National Council of Education and president of the Normal Section of the National Teachers' Association. He has established strong claims as an author in the educational field, and in addition to numerous magazine articles, has prepared the following works for the press: *A System of Dictionary Work for Common Schools; Translation of Lindner's Empirical Psychology; Language Work below the High School; The Essentials of Method; a Philosophical Investigation of what is Universal in Correct Methods of Teaching.*

In speaking, his address is pleasing and impressive, and his manner carries conviction to his hearers. His advanced ideas on educational topics, strong personality, and moral tone will make him felt in the educational circles of Pennsylvania, and under his wise and prudent guidance Swarthmore will assume a leading place in the colleges of the East.

Benjamin F. Battin.

AN OPTIMIST.

In summer-time sweet Nature I adore,
Because her geniality appeals
Unto my very soul; and furthermore
For all the wondrous beauties she reveals.

In autumn days I love her quite as well,
Because I dote upon her fresh and cooling breezes;
And then the hues spread over hill and dell
My deep-set love of color greatly pleases.

In winter hours, too, I bend before
Her shrine and worship; she doth so allure
By sending spotless snow the whole world o'er,
And making thus all things seem good and pure.

And spring still finds me lying prostrate there,
To render praise that to her might belongs;
Because in spring all is so wondrous fair,
And worthy well the best of poets' songs.

Indeed I do not cease to sing my praise
To Nature, in my poor and halting rhyme,
In summer, spring, in fall, or winter days,
Since I'm her lover true at every time.

John Kendrick Bangs.

ORIGINALITY.

Emerson says that "Plato has made havoc with our originality." But before Plato taught, Solomon declared, "There is nothing new under the sun!"

Now here is an array to daunt the boldest. Who dare speak when such authorities declare it useless? If everything has been said, what is there left to say?

Early in the world's history men discovered a few great truths. And they found out that mankind being always and everywhere the same, there would be no more to discover. And when these truths had been preached and sung and taught awhile, the listeners, who could not understand them, got tired and turned, as the Athenians did, to hear and to tell some new thing. Yet the Athenians never heard or told a new truth. It was all as old as the foundations of the world.

The few who have declared these truths in words which cannot die have at the same time declared them old. Their names stand out like great towers in the land. We who listen and understand and long to grasp them, concede that the words of wisdom have all been spoken, that the sage of to-day can tell us nothing more, and that the last living philosopher can but give his testimony to what has been already said. "There is one truth," they all cry. "But originality! It died long before the wisest man was born."

To each mind that strives to see clearly, truth, although ever the same truth, presents itself in original forms, and in endless combinations. It is new to whoever perceives it newly. As the morning, which is always breaking since the first morning broke, seems dewy and glittering, and freshly descended from heaven to just-opened eyes, so to the mind awakened to perceive truth, it comes as strong and pure as ever it came to the first mind that gladly opened to receive it. Nature is not old. She is forever new. Truth is not old. It is born to-day in every young heart. To find an original thought would be a vain hope indeed. Yet the words of the weakest need not be silenced for that reason. For, with sages and philosophers, they may bear witness in whatever way is given them to testify. Only expression can be new. The truth itself is eternal.

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When she had Children, she gave them Castoria.—[*Adv.*]

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The Best Worm Lozenges for Children are Brown's Vermifuge Comfits, 25c. a box.—[*Adv.*]

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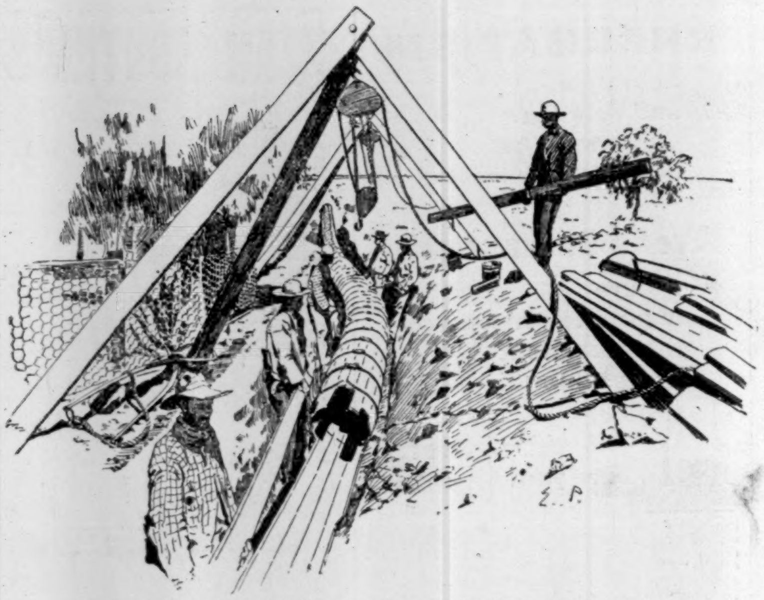

WOODEN-PIPE LINE IRRIGATION, PERRIS VALLEY, CALIFORNIA.

WOODEN PIPES FOR IRRIGATION.

IRRIGATION is one of the oldest of the arts, and many of the ancients practised it with as great skill as has been shown in our own time, when by its help what less than a generation ago was known as the Great American Desert has been converted into as fruitful farming land as any in the country. In such an old art it is interesting to note anything that is new, and something in this direction has just been accomplished in California. The usual method of taking water from place to place for irrigating purposes has been by the construction of canals, and that was the universal practice in ancient times. But in the western part of the United States, for some time past, large pipe lines have been laid, and have been used with much success. There is a long pipe line in California from the Great Bear Reservoir, in the San Bernardino Mountains, which extends for forty miles into the Perris Valley, in southern California. This steel-pipe line has now been tapped by a pipe line seven miles in length made of redwood staves from twelve to twenty feet long, and bound together with steel bands or hoops. This wooden pipe is thirty-six inches in diameter, and will therefore carry a large volume of water. What is new in this line is the use of wood for constructing so long and large a pipe as this for irrigating purposes. Wood is not usually plentiful in sections needing new irrigation works, and it is therefore not likely that this plan will be imitated to any considerable extent.

TO THE DEFENDERS OF THE UNION.

PATRIOTISM is one of the higher virtues of man—one of the oldest, it might be said. The ancient poets wrote hymns in its praise; the oldest established peoples held a love of their country that made them brave in the face of death. One of the greatest punishments of Rome was exile; and to-day every true man will respond to the call of his country, as the men responded thirty years ago. Patriotism cannot be analyzed; it is akin to love, but demands oftentimes the renunciation of personal love, and offers to the citizen no reward greater than that epitaph, "Dead—on the field of honor." A monument may be raised to his honor, to his corps or regiment, by State or county, but he is only one of the thousands that brought about the glorious consummation, even though he led. Memorials, more or less local and distinctive, are raised everywhere, but the tribute dedicated October 1st by the people of Schuylkill County, Pennsylvania, is deserving of national credit. President Lincoln's first proclamation was issued on the 15th of April, 1861. Three days afterwards the First Defenders of Schuylkill County passed through Baltimore, and were the first volunteers in Washington. The towns of Pottsville, Reading, Allentown, and Lewistown sent forth their citizens to the defence of the Union, and Congress has recognized the band of 500 men as the First Defenders. With the patriotism that fired the people then they have raised the monument of Liberty, not only to that noble little company, but "to the brave sons who served in defence of the Union." Qualified in all respects to raise such a memorial, no more fitting sentiment could be found.

Four years ago several gentlemen formed the association for the erection of the monument, and called for contributions. One dollar was the amount necessary to secure membership in the association, and poor widows of the brave men saved little by little until the dollar was secured, in order to be numbered with those who raised the tribute. It was a popular movement from the start, inspiring every one to contribute at the cost of personal sacrifice. The memorial is an irregular octagonal column of Vermont granite. It is 18 feet in diameter at the base, and, receding in size, is reduced to a square at the height of 9 feet. Upon this rises a simple Corinthian shaft, crowned by a statue of Liberty, holding a wreath in her right hand. The figure is heroic, graceful in pose, and her foot presses upon broken shackles, and her left hand clasps the sheathed sword. At the four corners of the base four life-sized figures in bronze represent the branches of the service—cavalry, artillery, infantry, sailor. The whole is 42 feet in height. Upon the sides of the square base are the following inscriptions:

Erected A.D. 1891.

This memorial is the tribute of Schuylkill County to the brave sons who served in defence of the Union.

1861–1865.

The Washington Artillery and National Light Infantry of Pottsville, 246 men, were part of the 530 Pennsylvanians who first arrived to defend the National Capital, April 18, 1861.

From a population of 90,000, Schuylkill County, during the War of Secession, gave to the armies of the Union 13,000 volunteers.

Love, honor, renown, and lasting remembrance for those who fought for freedom and an imperilled country. May posterity profit by their example!

Dulce et decorum est pro patriâ mori.

Mr. August Zeller was the designer and sculptor of the work, and the military figures are perfect in every detail.

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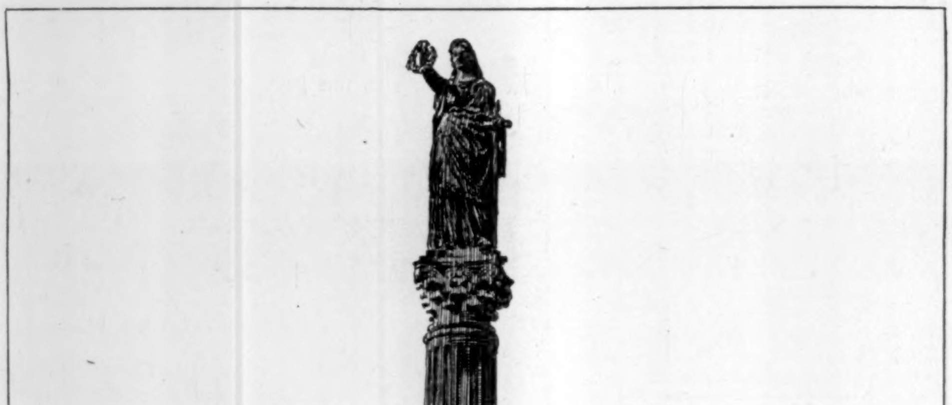

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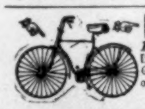

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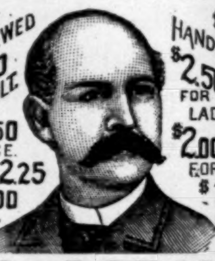

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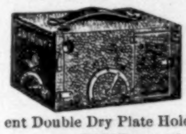

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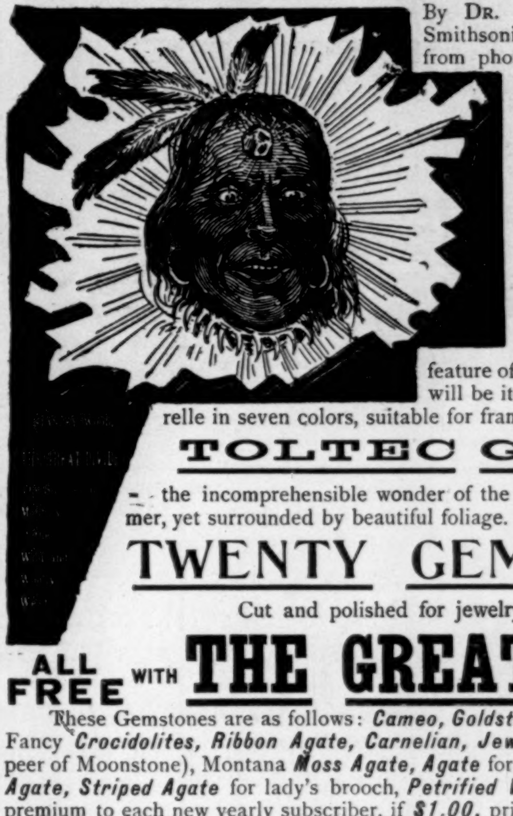

By DR. R. W. SHUFELDT, of the Smithsonian Institution. Illustrated from photographs which are said to be the only ones ever made. All of our illustrations are made direct from photo negatives, hence are absolutely true. This article is illustrated, showing ***The Beginning of the Dance, Handling Live Rattlesnakes, Hualpi,*** where the dance was held, and ***Moqui Indian Girl.*** The above is but one of the many articles and illustrations; the special feature of the ***OCTOBER Great Divide*** will be its Art Supplement, an Aquerelle in seven colors, suitable for framing, of

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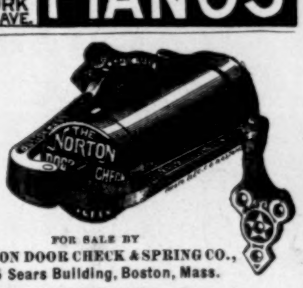

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